DECEMBER 2015 GROUNDWATER SAMPLING DATA SUMMARY REPORT

NAVAL WEAPONS INDUSTRIAL RESERVE PLAN (NWIRP) SITE 1 OU2 BETHPAGE, NY

Prepared for:



Department of the Navy Naval Facilities Engineering Command, Atlantic 9324 Virginia Avenue Building Z-144 Norfolk, Virginia 23511

March 2016

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Prepared by:



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List of Acronyms and Abbreviations

DOT Department of Transportation
IDW Investigation Derived Waste
Katahdin Katahdin Analytical Services

NG Northrop Grumman

NWIRP Naval Weapons Industrial Reserve Plant

NYSDEC New York State Department of Environmental Conservation

ONCT Onsite Containment System

OU Operable Unit

POTW Publicly Owned Treatment Works

QA Quality Assurance
QC Quality Control

SAP Sampling and Analysis Plan
UFP Uniform Federal Policy
VOC Volatile Organic Compounds

1.0 PROJECT BACKGROUND

Resolution Consultants has prepared this Groundwater Sampling Data Summary Report for the Naval Facilities Engineering Command, Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. The report describes quarterly sampling activities in December 2015, which is part of the Navy's ongoing Environmental Restoration Program for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 offsite plume. NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City (Figure 1).

This data summary report provides information on quarterly sampling of 47 Navy-owned monitoring wells by Resolution Consultants on behalf of the Navy, and by ARCADIS on behalf of the Navy at the direction of Northrop Grumman (NG) as part of an agreement between the Navy and NG. The purpose of this sampling is to provide information on the extent and magnitude of volatile organic compounds (VOCs) located in a narrow area immediately south of the Onsite Containment System (ONCT) in the western offsite plume, which could represent contamination that has bypassed the ONCT, to evaluate the southernmost extend of the OU2 plume, and to evaluate outpost wells intended to provide early warning of plume migration to public water supply wells. The locations of monitoring wells sampled as part of this effort are shown in Figure 2. Well construction information and sampling responsibility are listed in Table 1.

2.0 FIELD PROGRAM

Field tasks were conducted in December of 2015 in accordance with the Uniform Federal Policy (UFP) Sampling and Analysis Plan (SAP) Addendum: *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol* (Resolution Consultants, 2013). The field investigation included purging and sampling of monitoring wells in the quarterly groundwater sampling network.

The December 2015 quarterly sampling round consisted of a total of 47 wells (Table 1). Of these, 30 groundwater wells were sampled by Resolution Consultants and 17 were sampled by ARCADIS, NG consultant. ARCADIS sampled the following wells after initial sampling by Resolution Consultants in September 2015 (Resolution Consultants, 2016): RE117D1, RE117D2, RE118D1, RE119D1 and BPOW5-7. These wells were transitioned to ARCADIS for the December 2015 sampling event.

2.1 Sampling

Resolution Consultants purged monitoring wells using a bladder pump with the intake placed at the approximate midpoint of the screened interval. The following field water quality parameters were continuously measured during purging: water temperature, pH, conductivity, oxidation-reduction potential, dissolved oxygen and turbidity. Groundwater analytical samples were collected when field water quality parameters stabilized. Samples were analyzed for VOCs via Method 8260C and 1,4-dioxane via Method 8270C by Katahdin Analytical Services (Katahdin). All purge water was managed as investigation derived waste (IDW). Quality assurance (QA) and quality control (QC) samples were collected during the sampling effort.

Analytical results and stabilized field parameters for wells sampled by Resolution Consultants are summarized in Table 2 and Table 3, respectively. Groundwater sample forms and data validation packages for wells sampled by Resolution Consultants are included in Appendix A and B, respectively.

Results for ARCADIS-sampled wells are provided in Table 4, Table 5, Table 6; data validation packages are included in Appendix C.

Additional Navy-owned wells were sampled by ARCADIS in the fourth quarter of 2015 as part of separate and ongoing OU2 monitoring programs, as summarized in the sampling schedule in Appendix D. ARCADIS will document these activities and results in their 2015 Annual Groundwater

Monitoring Report, scheduled for submission to New York State Department of Environmental Conservation in the spring of 2016.

2.2 Investigation Derived Waste

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-contamination of samples. The sampling equipment included dedicated disposable polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment was decontaminated using a liquinox and water wash, a potable water rinse followed by a distilled water rinse. Purge water was collected in 5-gallon pails or 55-gallon drums.

Resolution Consultants transported purge water from point of generation to the designated staging area at NWIRP in Department of Transportation (DOT) approved 5-gallon pails. Purge water was then containerized in a frac tank and stored at NWIRP Bethpage for characterization and ultimate disposal to the Nassau County Publicly Owned Treatment Works (POTW) in accordance with the facility's existing discharge permit. A representative water sample was collected from each of the frac tanks and submitted to Katahdin for analysis of VOCs via Method SW 624, pH via Method SW 9040B, PCBs via Method 8082 and Total Metals via Method SW 846. All analytical criteria were met for disposal of water. No solid waste was generated during sampling.

3.0 SUMMARY

Well construction information for all wells sampled by Resolution Consultants and ARCADIS is summarized in Table 1.

Analytical results and stabilized field water quality parameters for wells sampled by Resolution Consultants are summarized in Tables 2 and 3, respectively. Groundwater sample forms and data validation packages for wells sampled by Resolution Consultants are included in Appendix A and B, respectively.

Analytical results for wells sampled by ARCADIS are summarized in Tables 4, 5 and 6. Data validation packages for wells sampled by ARCADIS are included in Appendix C.

Additional Navy-owned wells sampled by ARCADIS in the fourth quarter of 2015 as part of separate and ongoing OU2 monitoring programs are summarized in Appendix D.

4.0 REFERENCES

Resolution Consultants, 2013. UFP SAP Addendum, *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol.* November.

Resolution Consultants, 2016. September *2015 Groundwater Sampling Data Summary Report, Bethpage, NY*. February.

Tables

NWIRP Bethpage, NY

TABLE 1 MONITORING WELL CONSTRUCTION SUMMARY 2015 OU2 GROUNDWATER INVESTIGATION NWIRP BETHPAGE, NY

<u> </u>								
Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB Affiliation	Sampled By	
RE103D1	645	625	640	630	5	VPB137	Resolution	
RE103D2	673	653	673	663	0	VPB137	Resolution	
RE103D3	735	715	730	720	5	VPB137	Resolution	
RE104D1	375	350	370	360	5	VPB138	Resolution	
RE104D2	735	710	730	720	5	VPB138	Resolution	
RE104D3	785	760	780	770	5	VPB138	Resolution	
RE105D1	555	530	550	540	5	VPB139	Resolution	
RE105D2	755	730	750	740	5	VPB139	Resolution	
RE107D1	530	505	525	515	5	VPB141	Resolution	
RE107D2	585	560	580	570	5	VPB141	Resolution	
RE107D3	670	645	665	655	5	VPB141	Resolution	
RE108D1	555	530	550	540	5	VPB142	Resolution	
RE108D2	655	630	650	640	5	VPB142	Resolution	
RE114D1	560	535	555	545	5	VPB148	Resolution	
RE114D2	635	610	630	620	5	VPB148	Resolution	
RE114D3	725	700	720	710	5	VPB148	Resolution	
RE117D1	760	730	755	742.5	5	VPB151	ARCADIS	
RE117D2	810	780	805	792.5	5	VPB151	ARCADIS	
RE118D1	795	765	790	777.5	5	VPB152	ARCADIS	
RE119D1	745	715	740	727.5	5	VPB153	ARCADIS	
RE120D1	655	630	650	640	5	VPB154	Resolution	
RE120D2	713	690	710	700	3	VPB154	Resolution	
RE120D3	765	740	760	750	5	VPB154	Resolution	
RE121D1	575	550	570	560	5	VPB155	Resolution	
RE121D2	755	730	750	740	5	VPB155	Resolution	
RE122D1	545	520	540	530	5	VPB156	Resolution	
RE122D2	615	590	610	600	5	VPB156	Resolution	
RE122D3	740	715	735	725	5	VPB156	Resolution	
RE123D1	505	480	500	490	5	VPB157	Resolution	
RE123D2	660	635	655	645	5	VPB157	Resolution	
RE123D3	840	815	835	825	5	VPB157	Resolution	
TT101D	350	325	345	335	5	VPB129	Resolution	
TT101D1	595	570	590	580	5	VPB129	Resolution	
TT101D2	765	740	760	750	5	VPB129	Resolution	
BPOW5-1	515	480	510	495	5	VPB132	ARCADIS	
BPOW5-2	585	540	580	560	5	VPB132	ARCADIS	
BPOW5-3	665	620	660	640	5	VPB132	ARCADIS	

TABLE 1 MONITORING WELL CONSTRUCTION SUMMARY 2015 OU2 GROUNDWATER INVESTIGATION NWIRP BETHPAGE, NY

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB Affiliation	Sampled By
BPOW5-4	575	545	570	557.5	5	VPB151	ARCADIS
BPOW5-5	545	515	540	527.5	5	VPB152	ARCADIS
BPOW5-6	615	585	610	597.5	5	VPB152	ARCADIS
BPOW5-7	555	525	550	537.5	5	VPB153	ARCADIS
BPOW6-1	580	550	575	562.5	5	VPB145	ARCADIS
BPOW6-2	785	755	780	767.5	5	VPB145	ARCADIS
BPOW6-3	780	750	775	762.5	5	VPB146	ARCADIS
BPOW6-4	575	545	570	557.5	5	VPB146	ARCADIS
BPOW6-5	555	525	550	537.5	5	VPB147	ARCADIS
BPOW6-6	800	770	795	782.5	5	VPB147	ARCADIS

ft bgs - feet below ground surface

Location	NYSDEC	RE103D1	RE103D2	RE103D3	RE122D1
Sample Date	Groundwater	12/14/2015	12/14/2015	12/14/2015	12/15/2015
Sample ID	Guidance or Standard Value	RE103D1-GW-121415	RE103D2-GW-121415	RE103D3-GW-121415	RE122D1-GW-121515
Sample type code	(Note 1)	N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	12	3.2	2.5	4.7
1,1,2-TRICHLOROETHANE	1	0.62 J	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	1.1	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	7.6	0.77 J	0.62 J	0.63 J
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	3.2	1.1 J	1.0 J	1.9 J
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	12	1.2	0.81	8.7
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	0.24 J	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CHLOROFORM	7	< 0.50 U	< 0.50 U	0.79 J	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	3.2	1.1	1.0	1.9
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U			< 0.50 U
M- AND P-XYLENE	NL		< 0.50 U	< 0.50 U	
METHYL ACETATE	NL NL	< 1.0 U < 0.75 U	< 1.0 U < 0.75 U	< 1.0 U < 0.75 U	< 1.0 U < 0.75 U
METHYL ACETATE METHYL CYCLOHEXANE	NL NL	< 0.75 U < 0.50 U	< 0.75 U	< 0.75 U	< 0.75 U
	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER METHYLENE CHLORIDE	5				< 0.50 U
O-XYLENE	NL	< 2.5 U	< 2.5 U < 0.50 U	< 2.5 U	
STYRENE	NL 5	< 0.50 U		< 0.50 U	< 0.50 U < 0.50 U
		< 0.50 U	< 0.50 U	< 0.50 U	
TETRACHLOROETHENE TOLLIENE	5	3.0 J	0.72 J	< 0.50 UJ	1.5 J
TOLUENE TRANS 1.2 DICHI ODOETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFILLOROMETHANE	5	930	620	510	600
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC	RE122D2	RE122D3	RE104D1	RE104D2
Sample Date	Groundwater	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample ID	Guidance or Standard Value	RE122D2-GW-121515	RE122D3-GW-121515	RE104D1-GW-121515	RE104D2-GW-121515
Sample type code	(Note 1)	N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	21	< 0.50 U	4.6	< 0.50 U
1,1,2-TRICHLOROETHANE	1	3.1	< 0.50 U	< 0.50 U	< 0.50 U
1.1-DICHLOROETHANE	5	1.5	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	8.9	< 0.50 U	0.80 J	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	5.7	< 1.0 U	1.1 J	2.7
1,2-DICHLOROPROPANE	1		< 1.0 U		
		< 0.50 U		< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	11	< 0.17 U	6.9	0.22 J
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	1.9	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CHLOROFORM	7	2.6	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	5.7	< 0.50 U	1.1	2.7
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	0.68 J	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U		< 2.5 U
O-XYLENE	NL	< 2.5 U	< 2.5 U	< 2.5 U < 0.50 U	< 0.50 U
STYRENE	5	+			
TETRACHLOROETHENE		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
	5	2.3 J	< 0.50 UJ	1.9 J	< 0.50 UJ
TOLUENE TRANS 4 2 DIGILI ODGETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	5	4700	2.5	110	6.8
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location		RE104D2	RE104D3	RE114D1	RE114D2
Sample Date	NYSDEC Groundwater	12/15/2015	12/15/2015	12/21/2015	12/16/2015
Sample ID	Guidance or Standard Value	DUPLICATE1-GW- 121515	RE104D3-GW-121515	RE114D1-GW-122115	RE114D2-GW-121615
Sample type code	(Note 1)	FD	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	0.64 J	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	20 J	14
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	1.6 J	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	1.5 J	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	4.0 J	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	2.7	< 1.0 U	5.1 J	0.82 J
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	0.28	< 0.17 U	5.5	2.5
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	2.5 J	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U
CHLOROFORM	7	< 0.50 U	< 0.50 U	2.9 J	0.40 J
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	2.7	< 0.50 U	5.1 J	0.82 J
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	1.0 J	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 U	0.30 J	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U
TRICHLOROETHENE	5	6.8	< 0.50 U	370	70
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
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Sample ID Sample ID Sandard Value (Note 1) N N N N N N N N N	Sample ID Sample type code 60C (ug/L) RICHLOROETHANE FETRACHLOROETHANE	Groundwater Guidance or Standard Value				12/17/2015
Sample ID Guidance or Standard Value (Note 1) RE105D1-GW-121715 RE105D2-GW-121715 TT101D-GW (Note 1) N N N N N N N N N N N N N N N N N N	Sample type code 60C (ug/L) RICHLOROETHANE FETRACHLOROETHANE	Guidance or Standard Value	RE114D3-GW-121615	RE105D1-GW-121715		
Sample type code	60C (ug/L) RICHLOROETHANE FETRACHLOROETHANE	(Note 1)			RE105D2-GW-121715	TT101D-GW-121715
VOC 8260C (ug/L) 1.1.1-TRICHLOROETHANE 5	60C (ug/L) RICHLOROETHANE FETRACHLOROETHANE		N	N	N	N
1,1,1-TRICHLOROETHANE	RICHLOROETHANE FETRACHLOROETHANE					
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE 1 < 0.50 U	RICHLORO-1,2,2-TRIFLUOROETHANE		+			< 0.50 U
1,1-DICHLOROETHANE 5 < 0.50 U		5	13	8.7	26	16
1,1-DICHLOROETHANE 5 < 0.50 U	RICHLOROETHANE	1	< 0.50 U	< 0.50 U	1.3	< 0.50 U
1,1-DICHLOROETHENE 5 1.1 1.3 7.0 3.4 1,2,4-TRICHLOROBENZENE 5 < 0.50 U		-	+			0.84 J
1,2,4-TRICHLOROBENZENE 5 < 0.50 U	HLOROETHENE	-	1.1		7.0	3.4
1,2-DIBROMO-3-CHLOROPROPANE 0.04 < 0.75 U		-				< 0.50 U
1,2-DIBROMOETHANE NL < 0.50 U			+			< 0.75 U
1,2-DICHLOROBENZENE 3 < 0.50 U			+			< 0.50 U
1,2-DICHLOROETHANE 5 < 0.50 U			+			< 0.50 U
1,2-DICHLOROETHENE, TOTAL 5 0.67 J 1.7 J 4.0 3.1 1,2-DICHLOROPROPANE 1 < 0.50 U			+			< 0.50 U
1,2-DICHLOROPROPANE 1 < 0.50 U			+			3.1
1,3-DICHLOROBENZENE 3 < 0.50 U	· · · · · · · · · · · · · · · · · · ·	-	+			< 0.50 U
1,4-DICHLOROBENZENE 3 < 0.50 U		-	+			< 0.50 U
1,4-DIOXANE (Method 8270D_SIM) NL 2.1 10 5.8 8.4 2-BUTANONE 50 < 2.5 U		+	+			< 0.50 U
2-BUTANONE 50 < 2.5 U			+			8.4
2-HEXANONE 50 < 2.5 U	, , ,	+	-			
4-METHYL-2-PENTANONE NL < 2.5 UJ						
ACETONE 50 < 2.5 U < 2			+			
BENZENE 1 < 0.50 U < 0			+			
BROMODICHLOROMETHANE 50 < 0.50 U		+	+			
BROMOFORM 50 < 0.50 U		-				
BROMOMETHANE 5 < 1.0 UJ			+			
CARBON DISULFIDE 60 < 0.50 U			+			< 0.50 U
CARBON TETRACHLORIDE 5 < 0.50 U			+			< 1.0 UJ
CHLOROBENZENE 5 < 0.50 U			+			< 0.50 U
CHLOROETHANE 5 < 1.0 U		-	+			< 0.50 U
CHLOROFORM 7 < 0.50 U 0.38 J 2.0 0.55 CHLOROMETHANE 5 < 1.0 U		-	+			< 0.50 U
CHLOROMETHANE 5 < 1.0 U < 1.0 U < 1.0 U < 1.0 U			+			< 1.0 U
		-	+			0.55 J
CIS-1,2-DICHLOROETHENE		-	+			< 1.0 U
			+			3.1
		-	+			< 0.50 U
		+				< 0.50 U
						< 0.50 U
		-				2.2
			< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
		-	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
			+			< 1.0 U
			< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE NL < 0.50 U < 0.50 U < 0.50 U < 0.50 U	CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER 10 < 0.50 U < 0.50 U < 0.50 U < 0.50 U	_ TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE 5 < 2.5 U < 2.5 U < 2.5 U < 2.5 U	LENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE NL < 0.50 U < 0.50 U < 0.50 U < 0.50 U	NE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE 5 < 0.50 U < 0.50 U < 0.50 U < 0.50 U	NE .	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE 5 < 0.50 UJ < 0.50 UJ 1.9 J < 0.50	CHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	1.9 J	< 0.50 UJ
TOLUENE 5 < 0.50 U < 0.50 U < 0.50 U < 0.50 U	NE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE 5 < 0.50 U < 0.50 U < 0.50 U < 0.50 U	1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE 0.4 < 0.50 U < 0.50 U < 0.50 U < 0.50 U	1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE 5 43 120 1800 74	OROETHENE	5	43	120	1800	74
TRICHLOROFLUOROMETHANE 5 < 1.0 U < 1.0 U < 1.0 U < 1.0 U	OROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE 2 < 1.0 U < 1.0 U < 1.0 U < 1.0 U	HLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL 5 < 1.5 U < 1.5 U < 1.5 U < 1.5 U	S, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NVODEO	TT101D1	TT101D2	TT101D2	RE107D1
Sample Date	NYSDEC Groundwater	12/17/2015	12/21/2015	12/21/2015	12/18/2015
Sample ID	Guidance or Standard Value	TT101D1-GW-121715	TT101D2-GW-122115	DUPLICATE-GW- 122115	RE107D1-GW-121815
Sample type code	(Note 1)	N	N	FD	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	0.34 J	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	16	19	24	0.95 J
1,1,2-TRICHLOROETHANE	1	0.48 J	0.50 J	0.65 J	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	0.81 J	< 0.50 U
1,1-DICHLOROETHENE	5	4.6	3.6 J	5.0 J	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 UJ	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	1.9 J	1.7 J	2.0	0.21 J
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	11	1.7	2.2	6.9
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	1.9	1.3 J	1.4	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	1.0	0.90 J	0.92 J	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	1.9	1.7 J	2.0	0.21 J
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	1.8 J	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	0.94 J	1.6 J
TOLUENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TRICHLOROETHENE	5	200	510	590	17
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 UJ	< 1.5 U	< 1.5 U
~/ ~		1 0	55	0	

Location	111/0050	RE107D2	RE107D3	RE123D1	RE123D2
Sample Date	NYSDEC Groundwater	12/18/2015	12/29/2015	12/21/2015	12/21/2015
Sample ID	Guidance or Standard Value	RE107D2-GW-121815	RE107D3-GW-122915	RE123D1-GW-122115	RE123D2-GW-122115
Sample type code	(Note 1)	N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	15	4.9	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	2.7	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	9.3	< 0.17 U	5.0	0.70
2-BUTANONE	50	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	2.7	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	6.4	< 0.50 UJ	< 0.50 UJ	0.59 J
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 UJ	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TRICHLOROETHENE	5	140	0.36 J	6.1	1.5
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
l.					

Location	NYSDEC	RE123D3	RE120D1	RE120D2	RE120D3
Sample Date	Groundwater	12/21/2015	12/18/2015	12/29/2015	12/29/2015
Sample ID	Guidance or Standard Value (Note 1)	RE123D3-GW-122115	RE120D1-GW-121815	RE120D2-GW-122915	RE120D3-GW-122915
Sample type code	(Note 1)	N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	42	25	3.1
1,1,2-TRICHLOROETHANE	1	< 0.50 U	1.4	0.64 J	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	3.2	1.1	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	23	5.7	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	4.0	3.4	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	< 0.17 U	12	8.8	0.28
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	0.56 J	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	0.79 J	0.69 J	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U
CHLOROFORM	7	< 0.50 U	0.99 J	0.77 J	< 0.50 U
CHLOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	4.0	3.4	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	0.38 J	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 UJ	< 0.75 UJ	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 UJ	2.1 J	3.7 J	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 U
TRICHLOROETHENE		< 0.50 U	1300	680	29
	5				
TRICHLOROFLUOROMETHANE	5				< 1.0 U
VINYL CHLORIDE		< 1.0 U	0.39 J < 1.0 U	0.26 J < 1.0 U	< 1.0 U < 1.0 U

Location	NYSDEC	RE108D1	RE108D2	RE121D1	RE121D2
Sample Date	Groundwater	12/22/2015	12/22/2015	12/21/2015	12/21/2015
Sample ID	Guidance or Standard Value (Note 1)	RE108D1-GW-122215	RE108D2-GW-122215	RE121D1-GW-122115	RE121D2-GW-122115
Sample type code	(Note 1)	N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	1.4 J	0.38 J	0.48 J
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	1.4	6.2	8.3	17 J
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 2.5 U	< 0.50 U	0.64 J
1,1-DICHLOROETHANE	5	< 0.50 U	5.1	< 0.50 U	0.51 J
1,1-DICHLOROETHENE	5	0.44 J	9.0	2.1	3.1 J
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 3.8 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 2.5 U	0.38 J	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	0.61 J	9.0 J	0.96 J	2.1 J
1,2-DICHLOROPROPANE	1	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
1,4-DIOXANE (Method 8270D_SIM)	NL	6.7	8.8	6.8	4.9
2-BUTANONE	50	< 2.5 UJ	< 12 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 12 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 12 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 12 UJ	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	1.8 J	0.34 J	3.1 J
CHLOROBENZENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 5.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	4.4 J	0.47 J	1.7 J
CHLOROMETHANE	5	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	0.61 J	9.0	0.96 J	2.1 J
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 5.0 U	2.2	0.85 J
ETHYLBENZENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 3.8 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 12 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	1.2	< 2.5 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 UJ	< 2.5 UJ	< 0.50 UJ	< 0.50 UJ
TRICHLOROETHENE	5	110	2900 J	29	480
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 7.5 U	< 1.5 U	< 1.5 U
,	<u> </u>	0		1 5	

Notes:

1 New York State Department of Environmental Conservation Division of Water Technical and Operation Guidance series (6 NYCRR 700-706, Part 703.5 summarized in TOGS 1.1.1)

Ambient water quality standards and groundwater effluent limitations, class GA; NL = Not Listed

Bold = Detected; **Bold and Italics**=Not detected exceeds NYS Groundwater Standards or guidance value Yellow highlighted values exceed Groundwater Standards or guidance value

Sample type codes: N - normal environmental sample, $\,$ FD - field duplicate

U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte.
 J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 3 STABILIZED FIELD PARAMETERS FOR WELLS SAMPLED BY RESOLUTION CONSULTANTS 2015 OU2 GROUNDWATER INVESTIGATION

Well	Date	Temperature (°C)	рН	Specific Conductance (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to water (ft bgs)	Flow rate (ml/min)
TT101D	12/17/2015	15.26	4.63	0.078	0.47	225.0	0.10	34.01	850
TT101D1	12/17/2015	15.23	5.03	0.082	0.87	231.8	0.10	35.01	850
TT101D2	12/21/2015	15.30	5.09	0.034	7.41	157.4	0	35.38	700
RE103D1	12/14/2015	15.19	5.25	0.137	4.24	102.6	0.14	40.87	500
RE103D2	12/14/2015	14.87	5.38	0.039	7.30	194.9	0.21	40.15	490
RE103D3	12/14/2015	15.03	5.58	0.041	5.31	161.4	0.66	41.22	500
RE104D1	12/15/2015	14.23	5.09	0.053	4.67	254	0.39	37.02	500
RE104D2	12/15/2015	14.38	4.81	0.019	7.20	188.1	2.80	39.38	500
RE104D3	12/15/2015	14.28	4.49	0.016	5.78	120.1	2.7	39.9	600
RE105D1	12/17/2015	14.43	4.65	0.085	2.72	129.3	0.17	38.50	675
RE105D2	12/17/2015	14.60	4.58	0.056	5.28	205.7	0.10	36.78	500
RE107D1	12/18/2015	13.91	5.52	0.083	4.02	152.9	414.00	41.80	525
RE107D2	12/18/2015	14.56	5.69	0.077	3.49	238.1	49.5	42.68	700
RE107D3	12/29/2015	14.03	5.65	0.033	7.42	20.7	48.4	42.21	250
RE108D1	12/22/2015	14.56	5.10	0.096	7.63	282.1	0.55	40.24	600
RE108D2	12/22/2015	14.32	4.70	0.082	5.42	38.1	0.20	40.72	550
RE114D1	12/21/2015	13.85	5.82	0.073	2.62	148.7	21.00	31.64	500
RE114D2	12/16/2015	14.28	5.99	0.070	0.66	100.9	34.1	31.84	500
RE114D3	12/16/2015	14.35	5.45	0.033	5.78	245.2	1.42	32.26	500
RE120D1	12/18/2015	14.43	4.79	0.094	1.81	104.9	0.42	36.61	525
RE120D2	12/29/2015	14.87	5.22	0.080	5.91	42.6	1.45	36.70	500
RE120D3	12/29/2015	14.75	4.88	0.026	4.72	98.1	1.2	37.14	500
RE121D1	12/21/2015	15.97	5.50	0.071	0.57	154.1	4.21	34.40	863
RE121D2	12/21/2015	15.15	5.16	0.071	2.77	-54.5	8.85	34.41	450
RE122D1	12/15/2015	14.54	5.73	0.079	2.92	89.8	1.02	42.48	600
RE122D2	12/15/2015	14.80	5.21	0.071	5.13	213.7	0.68	43.00	600
RE122D3	12/15/2015	14.60	4.67	0.020	3.32	180.4	14.3	42.82	500
RE123D1	12/21/2015	15.59	5.25	0.087	9.32	172.8	3.08	47.63	700
RE123D2	12/21/2015	14.38	5.54	0.022	8.37	202.9	4.52	48.99	550
RE123D3	12/21/2015	14.77	5.72	0.066	0.66	-82.8	9.25	48.95	600

°C - degrees Celsius

 $\mu \text{S/cm}$ - Microsiemens per Centimeter

mg/L - milligrams per liter

mV - Millivolts

NTU - Nephelometric Turbidity Unit ft bgs - feet below ground surface ml/min - mililiters per minute

Table 4.

Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Monitoring Wells BPOW5-1 through BPOW5-7, Fourth Quarter 2015
Operable Unit 2 (Groundwater),
Bethpage, New York



Well:	BPOW5-1	BPOW5-2	BPOW5-3	BPOW5-4	BPOW5-5	BPOW5-6	BPOW5-7
Sample ID:	BPOW5-1	BPOW5-2	BPOW5-3	BPOW5-4	BPOW5-5	BPOW5-6	BPOW5-7
CONSTITUENT Date:	11/12/2015	11/12/2015	12/3/2015	11/16/2015	11/13/2015	11/13/2015	11/20/2015
Units (ug/L)							
Volatile Organic Compounds (VOCs) (1)							
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Hexanone	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
4-methyl-2-pentanone (MIK)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone	< 5.0 B	< 5.0	< 5.0	< 5.0 B	< 5.0 B	< 5.0	< 5.0 B
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.15 J	< 0.50
Carbon tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibromochloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methylene Chloride	< 0.50	< 0.50	< 0.50	< 0.50 B	< 0.50	< 0.50	< 0.50
Styrene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.49 J
trans-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethylene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl Chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylene-o	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylenes - m,p	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs (2)	0	0	0	0	0	0.15	0.49
1,4-Dioxane (3) See last page for Notes and Abbreviations	<0.22	< 0.23	0.39	0.28	0.42	< 0.21	< 0.21

See last page for Notes and Abbreviations

Table 4.

ARCADIS Design & Consultancy for natural and built assets

Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells BPOW 5-1 through BPOW 5-7, Fourth Quarter 2015 Operable Unit 2 (Groundwater),

Bethpage, New York

Notes and Abbreviations:

Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014).

Bold Constituent detected TCL Target Compound List VOC Volatile Organic Compound

USEPA United States Environmental Protection Agency

Selected Ion Monitoring SIM μg/L Micrograms per liter

J Constituent value is estimated

В Constituent detected in associated blank sample

< 0.50 Constituent not detected above its laboratory detection limit

Table 5.

Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells BPOW6-1 through BPOW6-6, Fourth Quarter 2015 Operable Unit 2 (Groundwater), Bethpage, New York



Well:	BPOW6-1	BPOW6-2	BPOW6-3	BPOW6-4	BPOW6-4	BPOW6-5	BPOW6-6
Sample ID:	BPOW6-1	BPOW6-2	BPOW6-3	BPOW6-4	REP120115PP1	BPOW6-5	BPOW6-6
CONSTITUENT Date:	11/30/2015	11/30/2015	12/1/2015	121/2015	12/1/2015	12/2/2015	12/2/2015
Units (ug/L)							
Volatile Organic Compounds (VOCs) (1)							
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Hexanone	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
4-methyl-2-pentanone (MIK)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0 B	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.89	0.40 J
Carbon tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibromochloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methylene Chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Styrene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethylene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl Chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylene-o	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylenes - m,p	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs (2)	0	0	0	0	0	0.89	0.4
1,4-Dioxane (3)	< 0.22	< 0.22	< 0.23	< 0.22	< 0.21	< 0.21	< 0.22

See last page for Notes and Abbreviations.

Table 5.

Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells BPOW 6-1 through BPOW 6-6, Fourth Quarter 2015 Operable Unit 2 (Groundwater), Bethpage, New York



Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014).

Bold Constituent detected
TCL Target Compound List
VOC Volatile Organic Compound

USEPA United States Environmental Protection Agency

REP Blind duplicate sample
SIM Selected Ion Monitoring
µg/L Micrograms per liter

J Constituent value is estimated

< 0.50 Constituent not detected above its laboratory detection limit

Table 6.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells RE117D1, RE117D2, RE118D1 and RE119D1, Fourth Quarter 2015 Operable Unit 2 (Groundwater), Bethpage, New York



Well:	RE117D1	RE117D2	RE118D1	RE119D1
Sample ID:	RE117D1	RE117D2	RE118D1	RE119D1
CONSTITUENT Date:	11/18/2015	11/18/2015	11/23/2015	11/20/2015
Units (ug/L)				
Volatile Organic Compounds (VOCs) (1)				
1,1,1-Trichloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluroethane	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
1,1-Dichloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
1,1-Dichloroethene	< 1.0	< 1.0 J	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
1,2-Dichloropropane	< 1.0	< 1.0 J	< 1.0	< 1.0
2-Butanone (MEK)	< 10	< 10 J	< 10	< 10
2-Hexanone	< 5.0	< 5.0 J	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)	< 5.0	< 5.0 J	< 5.0	< 5.0
Acetone	< 10	< 10 J	< 10	< 10
Benzene	< 0.50	< 0.50 J	< 0.50	< 0.50
Bromodichloromethane	< 1.0	< 1.0 J	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0 J	< 1.0	< 1.0
Bromomethane	< 2.0	< 2.0 J	< 2.0	< 2.0
Carbon Disulfide	< 2.0	< 2.0 J	< 2.0	< 2.0
Carbon tetrachloride	< 1.0	< 1.0 J	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0 J	< 1.0	< 1.0
Chloroethane	< 1.0	< 1.0 J	< 1.0	< 1.0
Chloroform	< 1.0	< 1.0 J	< 1.0	< 1.0
Chloromethane	< 1.0	< 1.0 J	< 1.0	< 1.0
cis-1,2-dichloroethene	< 1.0	< 1.0 J	< 1.0	< 1.0
cis-1,3-dichloropropene	< 1.0	< 1.0 J	< 1.0	< 1.0
Dibromochloromethane	< 1.0	< 1.0 J	< 1.0	< 1.0
Ethylbenzene	< 1.0	< 1.0 J	< 1.0	< 1.0
Methylene Chloride	< 2.0	< 2.0 J	< 2.0	< 2.0
Styrene	< 1.0	< 1.0 J	< 1.0	< 1.0
Tetrachloroethene	< 1.0	< 1.0 J	< 1.0	< 1.0
Toluene	0.75 J	0.98 J	0.57 J	0.72
trans-1,2-dichloroethene	< 1.0	< 1.0 J	< 1.0	< 1.0
trans-1,3-dichloropropene	< 1.0	< 1.0 J	< 1.0	< 1.0
Trichloroethylene	9.4	< 1.0 J	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0 J	< 1.0	< 1.0
Xylene-o	< 1.0	< 1.0 J	< 1.0	< 1.0
Xylenes - m,p	< 1.0	< 1.0 J	< 1.0	< 1.0
Total VOCs (2)	10.15	0.98	0.57	0.72
1,4-Dioxane (3) See last page for Notes and Abbreviations	< 0.21	< 0.20	< 0.22	< 0.22

See last page for Notes and Abbreviations.

Table 6.

Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells RE-117D1, RE-117D2, RE-118D1 and RE-119D1, Fourth Quarter 2015 Operable Unit 2 (Groundwater), Bethpage, New York



Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using Method 8260C.

(2) Total VOCs are rounded to two significant figures.

Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014).

Bold Constituent detected
TCL Target Compound List
VOC Volatile Organic Compound

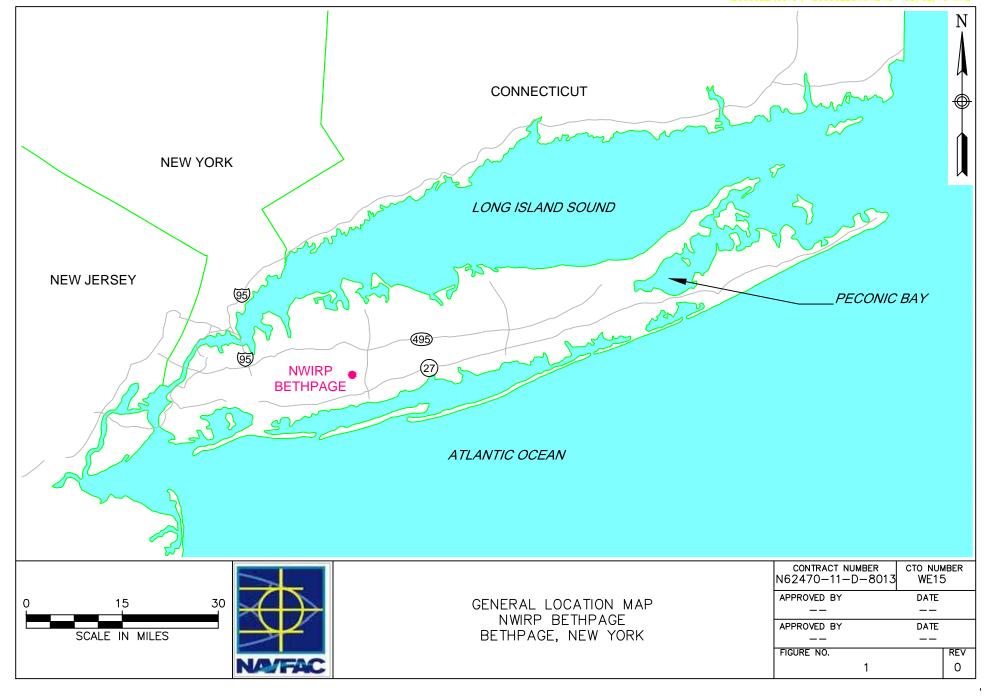
USEPA United States Environmental Protection Agency

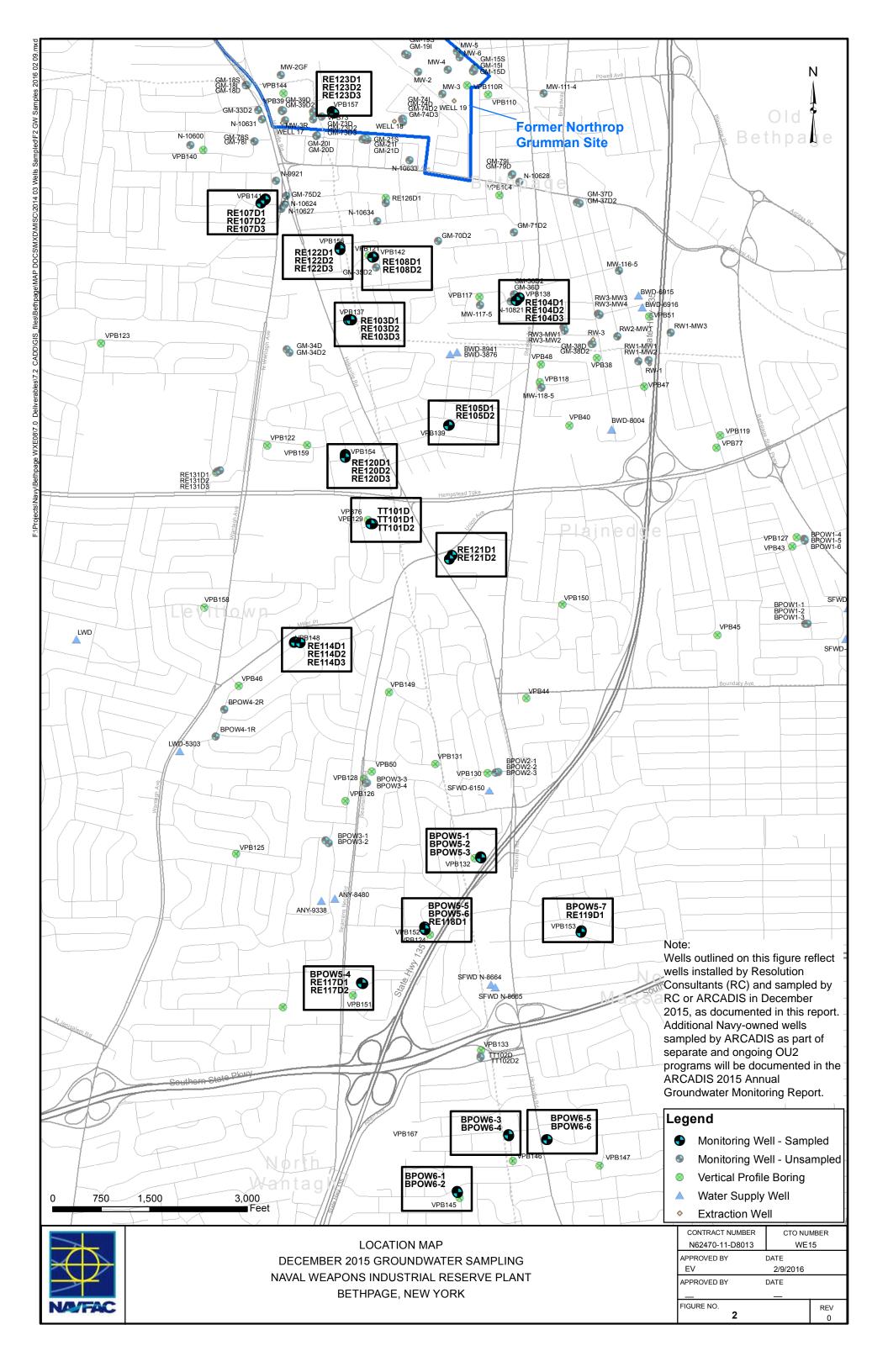
SIM Selected Ion Monitoring µg/L Micrograms per liter

J Constituent value is estimated

< 0.50 Constituent not detected above its laboratory detection limit

Figures





Appendices

Appendix A

Groundwater Sampling Forms – Resolution Consultants

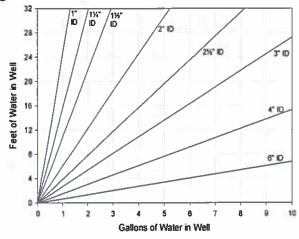


Well ID:	REIDSDI	N-07-	
	110001		

Low Flow Ground Water Sample Collection Record

CONSUL	TANTO										
Client:	Navy N	WIRP BE	ethpage			Date: <u>1</u> 2	2/ 14	<u>/ 15</u>	Time: Start	1135	_am/pm
Project N		6026652	6			•			Finish	1330	am/pm
Site Loca		Balwa		_							
Weather	Conds:	_Clm	idy 60	16		Col	lector(s):	Coler	e Foster		
1. WATI	ER LEVEL	DATA: (n	neasured	from Top	of Casing	9)	18/11			-878	200
	tal Well Ler	•		•	•			(a-b)	Casing Dia	ameter/Ma	terial
G. 10	CON TOTAL EST	·9···	-110	o. Longa	OI TTOLOI	Oolulliii		(4 5)	4-inch PV		Cilai
b. Wa	ater Table [Depth 41.4	8	d. Calcula	ated Syste	m Volume	e (see back)	9.8			
	L PURGE D				·						
	rge Method		Geotech	bladder pu	ımp with d	rop tube a	assembly				
	_			·							
	ceptance C emperature		ined (see		To colo initia	. 100/		В О	+ 400/ /	>0 E =	//
- 16	•	± 0.1 ur	nit		Turbidity - ORP -			- D.O.	± 10% (val	iues >u.5 n	ng/L)
_	Sp. Cond.			- 0	Drawdown			Remove a	minimum 1	screen vo	lume
										6100	
c. Fie	ld Testing l	=quipmen	t used:		Make		Model		Serial Nun	nber	
		1 4		35 00		11 V S	18 T X	A 1 7 C	E DAY		7.17%
											- 04
	Volume			Spec.	19						e 28
Time	Removed	Temp.	pН	Cond.	DO	ORP	United the state of the state o	Flow Rate		Color/	<u>Odor</u>
(24hr)	(Liters)	(°C)	1	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)		
1140		15,31	7,39	0,106	4.35	120	~	500	41.63		
11:50	-	15.27	6.02	0.105	1.62	101.8	1.41	500	41.65	Clear	
12:00	_	15.26	5.76	0.106	147	96.5	1.00	500	41.66		
12:05	<u></u>	15.27		8:10 m		97.0		500	41.60	Clean	
12:15				0.108	3.44	97.9	0.14	500	41.40	1.1800	
	5 Gal	15:30					,			6.3	
12:25	ceptance c			0.109	3, 63 Yes	98.0 No	N/A	500	41.09	Clier	- 1)
	as required			ved = =	[Z]	140				(continued on t	раск)
	s required				- 건 /	_ 🛱 -	- H-				
	ve parame				₫′						
	If no or N/	A - Expla	in below.								
3. SAME	PLE COLLE	ECTION:		Method:	Geotech I	bladder ni	ımo with d	rop tube as	sembly		
				Widthou.	00010011	oldddol pi	amp mar d	TOP TOPO BO	Citibiy	-	
Sample I				ner Type	No. of Co	ntainers	- Prese	rvation	- Analysi	is Req.	Time
RF10	3 DI-6W	121415	40-m	L vials	3		<u> </u>	CI	VO		1300
		_ B	1-L a	amber	2		no	ne	1,4-Di	oxane	
		T							_		
Commen	its										
		-									
							<u>-</u> .	700g			
Signature	9								Date		

Purge Volume Calculation



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2,4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

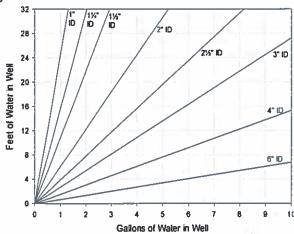
Well ID:

(continued for	om front)					•				
(commission in	Volume	F	1	Specific	1	i i	1	Flow	1	
Time	Removed		pH	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
								\1111/11111/	2//	0
12:35		15.17	7.53	0.155	3.83	98.8	0.15	500	41.05	Clean
12:45		1518	5.26	0.126	4.15	101.4	0.16	500	40.88	The second secon
18:50		1519	5.25	0.137	4-24	102.6	0.14	500	40.87	Clear 10 gallons
1300										
1000					-					
										3
										•
				3 4						
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								J		. 4
		W			e 19					
								,		*
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18.5				٠	-		-	1	-	
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		П
Well ID:		-
TT 0.11 1D.	RE100302	

Client: Project N	No:	6026652			L W.	Date: 1	21/4	<u>/ 15</u>	Time: Start _ Finish _	1045 1330	_am/pm _am/pm
Weather			Ly 350	· 2 2	3.	Col	lector(s):				_ i
a. To	ER LEVEL tal Well Le	DATA: (m	neasured	from Top c. Length	of Water	Column			Casing Dia		aterial
	L PURGE [/ a /]	u. Odlodie	aica Oysic	iii voidiiii	C (SCC DECK)				
	rge Method		Geotech	bladder pu	ımp with d	rop tube a	assembly				
- Te	ceptance C emperature - pH · Sp. Cond.	± 3% ± 0.1 un	·		- Turbidity - ORP Orawdown	± 10mV		- D.O. Remove a	± 10% (valu		
c. Fie	eld Testing	Equipmen	t used:		Make		Model		Serial Num	ber	
	-			T	1						2121
			5,4	41		41 3 7	E L D	1 102			
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp. (°C)	рH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	/Odor
1115	= =	T. 1	7.5	-51 0	i ëli.	Z = 1/23c	15.			OK	E22 08
1130	io X i 2	14.91	5.52	0012	5.46	147.2	TITE	300	r. (B.ka		COS
1135		14.45	5.49	0.040	5.36	1519	= 1	475	= =		L 82
140		14.95	5.45	0.047	546	156.8	= 1 =	475	41.10		3.7.61
1145		14.94	540	0.040	6.87	167.2	1.43	490	41.07		
1150		1493	5.39	0.039	7.24	170.9	0.97	490	41.05		
Ha Ha	cceptance of as required as required ave parame of the left no or Note that the left no or Note the left n	volume be turbidity b	een remo een reacl ized		Yes	No 	N/A		(6	continued on	back)
3. SAMI	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with d	rop tube as	sembly		
Sample I <i>RE103</i>	D 172-GW	121415	40-m	ner Type L vials amber	No. of Co	ontainers	H	rvation ICI	Analysis VOC 1,4-Dio	Cs	Time 1315
			1-L č	ai i i i i i i			110	one	1,4-レ10	Adile	
Commer	nts										
Signature									Date		



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

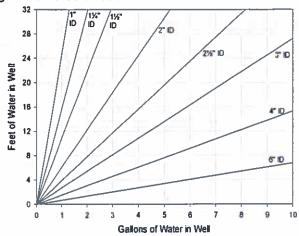
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

WEILID.										
(continued fro			1	ء اما	t	ı	1			
	Volume	_		Specific		0.00	351	Flow	Danish to	OnlandOde :
Time	Removed		pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
1155		14.92		0.039	7.49	1755	0.58	490	41-07	
1205		14.93		0.038	7.49	179.5	0.59	490	41.04	
1215			5-39	0.038	7.50	184.2		490	40.60	
1275		14.91	5.39	0.039	753	186-9	0.22	490	40.55	
W:30		141.90	5.38	0.08	7.52	1875	_	-150		
12:35		14.84	5.38	0.038	7.51	199,3	0.19	490	40.38	
12:35		14:87	5,38	0.038	7.41	191.3	0.18	490	40.32	- 1 2
12:55	100	1486	5 39	0.039	7.30	1946		490	40.28	Jan
1300		14.87	5.38	0.039	7.30	1949	0.21	490	40.15	13-gallons-
-300		7,20,7	Q.		74-50	· / / · /	0.0	,,,	7011-	7 3"
1315					-			=		
///>				Y						
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						ll .			5.1	
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<u> </u>										
	3									*
<u> </u>										
	A									
				,						



Well ID:	E103 D3	*		
----------	---------	---	--	--

CUNSUI	AMIS										
Client:	Navy I	WIRP B	ethpage			Date: 12	2114	<u>/ 15</u>	Time: Start	11:3	Om/pm
Project N		6026652			4	•	•		Finish	1330	am/pm
Site Loca		Buh	sage.	NY		<u>.</u>					
Weather	Conds:	Foggy	-			Col	lector(s):	F.B.M.	2. K/R.1		
1. WATI	ER LEVEL	DATA: (n	neasured	from Top	of Casing	g)		,	200		
a. To	tal Well Le	ngth 7	35	c. Length	of Water	Column		(a-b)	Casing Dia	ameter/M	aterial
									4-inch PV		
b. Wa	ater Table I	Depth <u>40</u>	95	d. Calcula	ated Syste	m Volume	e (see back)	98			
2. WELI	. PURGE (DATA									
a. Pu	rge Method	<u> </u>	Geotech	bladder pu	ımp with d	rop tube a	ssembly			_	
b Ac	ceptance C	riteria del	ined (see	worknian)							
	emperature		med (see		- Turbidity	± 10%		- D.O.	± 10% (vai	ues >0.5	ma/L)
	pH	± 0.1 ur	nit		- ORP			11.			
_ =	Sp. Cond.	± 3%		0	Orawdown	< 0.3'		Remove a	minimum 1	screen v	olume/
c. Fie	ld Testing	Eauiomen	t used:		Make		Model		Serial Num	ber	
100	_	0									
											3.46.24
	Volume										
Time	Removed	Temp.	pΗ	Spec. Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Colo	r/Odor
(24hr)	(Liters)	(°C)	<u> </u>	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	0010	7000
//: 30	_	15.08	6.72	0.043		1.12.4	_	-	_	Clar	n.
11:50		K.08	THE CONTRACTOR OF THE PERSON NAMED IN	0.040	5.87	119.8	2.02	475	41.30	Clea	~
62:00-	•	15:07		0.041	5.416	136.5	,	500	41.34	Cles	<u> </u>
12:05	**			0.041	5.49	142.60	0.86	_	4/1.35	Clio	
12:15		15.11	5.60		5.25	149.9	0.98		41.35		
12:25		15.06	5.63	0.041	5.62	158.8	0.57		41.28	-	
	ceptance o			0.047	Yes,	No	N/A			(continued or	n hack)
	s required	*		ved	9				9 =	(CONTRINCE O	, book)
	s required	•		ned		/ <u>□</u> –					
Ha	ve parame										
	If no or N	A - Expla	in below.								
				V I		Ш		100		·	
3. SAMF	PLE COLLI	ECTION:		Method:	Geotech	bladder pı	ump with d	lrop tube as	sembly		
Samala II	_		0	T	N= =60=					-	-
Sample II	03 GW-	17144		ner Type L vials	No. of Co	ntainers		rvation ICI	Analysi VO		Time
1120	03 000	4111		amber	2			one	1,4-Dic		100
		4.1		<u> </u>		<u> </u>	1				11
Commen	ts	ms/m	55 /-	nocted)	2000						
					120						
	<u> </u>										
Signature									Date		
3											



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

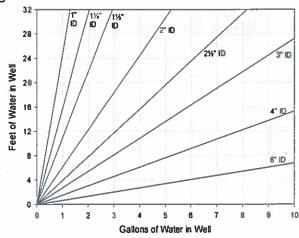
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro Time (24 hr)	Volume	1 1		C						
				Specific	1			Flow		
	Removed	Temp	рН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
		(°C)	p.,	(mS/cm)	(mg/L)	(mV)	/NITLI)	/ml/min)	water (ft)	00,01,000
(27111)	(Liters)	(0)	and a	(IIIO/GIII)	(mg/L)				water (it)	C 1
12:35	10901	15.03	5.58	0.0411	5.31	161.4	.66	5∞	41.20	Clean
)						
1245										
/	*			· · · · · ·		*****				
] [
							C 157% - 128	d		
				**						
_										
	26 11=									
							1	7	t b	
								50E A1385		
		,				*		,		
						>				* *
								-		
				,		,				
										
							1			·
									-	
										- 3.2 KV
-	4								- 1	*1
1140										



Well ID:	RE10401	
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Client: Project N	lo:	WIRP Be 6026652	6	-		Date: <u>12</u>	21 /5	<u>/ 15</u>	Time: Start Finish	745	_am/pm _am/pm
Site Loca			top	•							
Weather	Conds:	Sun	ny 60	-		Col	lector(s):				_ "
1. WATI	ER LEVEL	DATA: (n	neasured	from Top	of Casing	3)					
	tal Well Lei	1122		c. Length				(a-b)	Casing Dia 4-inch PVC		aterial
b. Wa	ater Table [Depth 36	.49	d. Calcula	ated Syste	m Volume	e (see back)				
	- PURGE I		Geotech	bladder pu	ımp with d	rop tube a	ssembly				
	ceptance C emperature				- Turbidity - ORP			- D.O.	± 10% (val	ues >0.5	mg/L)
	- p⊓ Sp. Cond.		IIL	- [- ORP Prawdown			Remove a	minimum 1	screen v	olume
	ld Testing I		tueed		Make		Model =		Coriol Num	hor	
C. FIE	ad resung	Equipmen	it used:		YS I	57	6 MTS	05	Serial Num		
							0 10.70		9,774	710	LOT In
	Volume			Snoo		_					
Time (24hr)	Volume Removed (Liters)	Temp.	pΗ	Spec. <u>Cond.</u> (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	/Odor
9.00		14.62	10,20		11.84	170.1		450	96.60	Mean	,
7:10		1	5.10	**** F1-1000 1000	6.01	<i>230,3</i>	-	450	-	Clea	(ire
9:15		A STATE OF THE PARTY OF THE PAR		0.056	The second second	247.7	0059	500	36,71	Clau	
7:20		14.01	THE PROPERTY OF	No Residence and Committee of the	5.76	263.9	<u> </u>	500	36.71	Clas	
7:28				0.0324		269.7	1 00	500	30.75	Clea	-
9:40	-	T. A. S. College		0.053		281.6	7.07			01	
	ceptance c	riteria pas	ss/fail	Q.053	Yes	No	N/A	500	36.81	(continued or	n back)
Ha Ha	as required as required ave parame If no or N	volume b turbidity b ters stabi	een remov een reach lized								
3. SAMF	LE COLLI	ECTION:	- 1	Method:	Geotech	bladder pu	ump with o	drop tube as	ssembly		1 ===
Sample I	D		Contair	ner Type	No. of Co	ntainers	Dress	ervation	Analysi	s Pen	Time
./):	401-6W	1715K		L vials	3	i itali ici s		i Valion iCi	VO		1100
1				amber	2			one	1,4-Dic		7, 50
						- 1	- 1	П			
Commen	its			_							
			<u> </u>								
			4								
Signature	9						5.7		Date		



	5%	
Volume /	Linear Ft	. of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600
	ID (in) 0.25 0.375 0.5 0.75 1 1.25 1.5 2 2.5 3	0.25 0.0025 0.375 0.0057 0.5 0.0102 0.75 0.0229 1 0.0408 1.25 0.0637 1.5 0.0918 2 0.1632 2.5 0.2550 3 0.3672 4 0.6528

One screen volume (4-inch well)

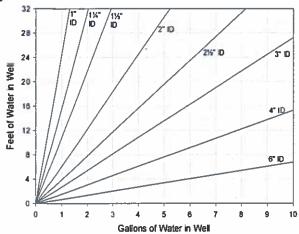
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro	ım front)			·			į.	4	S 9	
	Volume	1 1		Specific			30	Flow		
Time	Removed	Temp	pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
9:45	< Gal	14.12	5.09	0.054	5.11	DRS. 3	065	500	36.84	Chan
9:55	_	14.20	510	0.053	4,94	290.1	<u>منیت</u> ،	500	36.90	Clean
10:00		14.43	-	0.033	4.77	243.2	,72	500		Clean
10:05	-	141.412	5.11	01053	4.70	2935	_	500	36.91	
10:10	-	141.40	5.11	<u>ం. చకచె</u>	41.74	244.0	054	500		Clean
10:15	10 Gal	1430	5.4	0.053	4.73	245.4	.53	500	36.94	Clean
10:00	-	41.30	5.11	مرن 25ن	4.81		-	300	<u> </u>	Clas
10:25		X1.31	5.08	0.053	4.80	298.3	-61	500	37.00	Clar
16:30		141.30	5.08	0.053	4.73	242.0	. 4/3	500	37,00	Clan
10:35	, -	14.28	5.08	5.053	4.76	211.6	· 53	5∞		Clan
10:40		14.23	5.08	0.653	4.76	243.0	_	500	36.98	_
10:45	_	141.22	5.08	0.05.3	4.70	251.5	1.39	500	37.01	Cler
10:50	_		< 08	.053	4.69		, 33	500	37,00	Clan
10:50	15 Gal	41.23	5.09	0.053	4.67	25 4.0	.39	500	37,02	Clar
-0	1					,				,
Callect	co Sa	ple Co	2//:	00_						
						Þ				
										c I a mess
										v ===
									<i>F</i>	



Well ID:	RE10402	
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CUMSUL	TAMES	94 c.									
Client:	Navy N	WIRP Be	ethpage			Date: 12	21 15	/ <u>15</u>	Time: Start	745	am/pm
Project N		6026652					<			1/00	am/pm
Site Loca		h	1111top						•	3	
Weather	Conds:		uny e	60°		Col	lector(s):				
1 WATE	R I EVEL	ΠΑΤΑ: /n	,	from Top	of Casino	n)				/	
		-	-	•	-			(- L)	Casias Dia	# York	امام
a. 10	tai weli Lei	ngtn/	3)	c. Length	or water	Column		(a-b)	Casing Dia 4-inch PVC		eriai
h Wa	ter Table [Denth 3	9.97	d Calcula	ated Syste	m Volume	2 (see hack)	13.		<u>, </u>	
, and			, , , ,	u. Galouic	ated Cysto	an voiding	J (SCO DOCK)		1		
	PURGE (rge Method		Geotech	bladder pu	mp with d	rop tube a	ssembly				
b. Acc	ceptance C	riteria def	ined (see	workplan)							
	mperature		(300		- Turbidity	± 10%		- D.O.	± 10% (val	ues >0.5 m	ng/L)
		± 0.1 un	nit 🕠		- ORP				•		
-	Sp. Cond.	± 3%		- 0	Prawdown	< 0.3'		Remove a	minimum 1	screen vo	lume
c Fie	ld Testing	Equipmen	t used:		Make		Model		Serial Num	her	
0, 1 10	.5 , oothig	_qaipi11011			VSI		556		4502	2.50	
					Henna		48703		480		
				C.							
	Volume			Spec.							
<u>Time</u>	Removed		<u>рН</u>	Cond.	DO (ORP	Turbidity			Color/0	<u>Odor</u>
(24hr)	(Liters)?			(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)		
845		14,75	6,97	0.045	12.03	112.0	2.56	500	40.01	OH	
<i>0</i> 9ନସ	2.5	14,38	4.55	0.021	12.71	131.9	1.56	500 ml	40.0	clear	
905	5			_			2.22	V		HOLD	
915		14.24	<.18	A. 020	7.90	150,0		475		011	
920	5901	14.22	5.14	0.019	7.84	1464	_	475	3.4.98		- 4
925	7.01	14.28	5.01	0.019	7.49	148.5	_	, , ,			- 1
d. Ac	ceptance o			0.01-7	Yes	No No	N/A			continued on b	nack)
	s required			ved	2				-=		
	is required			ned	⊡∕						
Ha	ive parame										
	If no or N	/A - Explai	in below.								
3. SAMP	LE COLLI	ECTION:		Method:	Geotech	bladder po	ump with d	rop tube as	ssembly		
Sample I	D =		Contai	ner Type	No. of Co	ntainers	Prese	rvation	Analysi	s Ren	Time
•	1402-61	11-171413		ıL vials	3			ICI	VO	•	1030
71 1-70				amber	2			one	1,4-Dic		
DUPLIC	ATE1-61	1)-12/519								- /	1045
Commen	ts	900	4/4.	- 646 4	سرا البر	a t w	sol b	Gdder			
1		***3 *		1/	1º 1º	7 7					
0!		10. 1	or -	4			r>		Date	, /	/_ =
Signature	•	1 Med	1 (lee)	41)					Date	12/15/	13



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600
•		

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

REIDYDZ

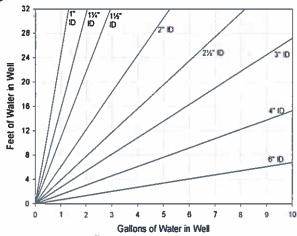
2845

Well ID.		TIL		///	873			- 71		
(continued from								ı		
	Volume	l _		Specific				Flow		
Time	Removed		pН	Cond	DO	ORP	Turbidity	Rate	Depth to	Color/Odor
(24 hr)	_(Liters)	(°C)	1 114	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
930		14.29	4.79	0.019	7.50	153.6	31/8	475	34.96	*
935		14.30	5.00	0-019	7.61	152.6				
940		14.31	4.95	0.019	7.56	160.4			39.75	
945		1432	492		7.40	166.3	10.5			
950		1434	491	1.019	7.42	170,5		500		
955	Ingal	14.35	492	0.019	7.31	1724	11.9			
1008		1436	4.90	0.019	7.28	175,2				
1005		1437	4.87	0.019	2.25	177.8	1	500	39.40	
1010		1438	4:83	0.019	7.33	1828	10.4		i	
1015	125901		4.80	0.019	7.34	184.7	4.38			
1020			4.62	0019	7.27	186.4		500	39.38	
1025	13.350		4.81	0.019	7.70	188.1	z.80			
1030			-						1	Sarade
							,			*
1045										Duplicata
1015				-					,	2
										- 41
		1								
							30			
					,					
									6	



Well ID:	RE104D3	
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CUMBUL	IAMIA						- 100				
Client:		IWIRP Be				Date: 1	21 15	15	Time: Start		_am/pm
Project N		6026652		7					Finish	(100)	_am/pm
Site Loca	ation:		H;11-	top				Victoria			
Weather	Conds:	1102	SUMMI	160°	1	Col	lector(s):	es			-
1. WATE	ER LEVEL		,		of Casing	3)					
	tal Well Ler		54.			- 7		•	Casing Dia 4-inch PVC		
b. Wa	ater Table D	Depth 31	167	d. Calcula	ated Syste	m Volum	e (see back)			3.1 gal.	tocemo
	PURGE D		K =				2 0				^
a. Pu	rge Method	:	Geotech	bladder pu	mp with d	rop tube a	assembly				11 0
	ceptance C		ined (see		- Turbidity	± 100/		- D.O.	± 10% (val	es >∩ ≤ r	ma/L)
- 16	emperature - pH	± 3% ± 0.1 ur	nit =		- ORP			- D.O.	± 10% (val	ucs /U.J I	iig/L)
_	Sp. Cond.			- 0	rawdown			Remove a	minimum 1	screen vo	olume
c. Fie	eld Testing l	Equipmen	t used:		Make		Model		Serial Num	ber	
0.110		-4-ibo.		YSI					0741003		
				Hann	מו דענא	dity 11	wes	- \		S. S	
						9					
	Volume	T	-1.1	Spec.	50	OBD (T. salaželite e	Elevi Bete	Donth to	Colori	Odor
Time (24hr)	Removed (Liters)	Temp.	<u>рН</u>	Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	(NTU)	Flow Rate (ml/min)	Depth to water (ft)	<u>Color/</u>	Odor
(24111) (355 (55 \Ψ	7 = 1(013)							35¢	39.71	diese	
San Sales	\ a & .		4.73	00.022	6.11	150.3	7.29	q		CLEAR	
0905 0015	1,250	14.15	y,53	0,017	5.25 5.76	114.7	9.81	55φ 55φ	39.70	clea	
0915	3.5		4.39 4.39	0.017	5-90	110.2		55φ	39.70 39.7	- (-144 (1821
925	4.5 5. 5	14.17					9.8 <u>0</u> 7.13			Cleas Lleas	
935		7 1 7 7		0.016	5.55	113+3		554	39.7		
की त ञ	6.5	14.20	4,44	0,017	5.87	114.7	7.20	5 <i>5</i> Ø	39.7	Cleas	
Ha Ha	cceptance of as required as required ave parame If no or No	volume b turbidity b ters stabi	een remo een reacl lized		Yes	No	N/A	w.		(continued on	Dack)
3. SAM	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with c	rop tube a	ssembly		
Sample I	ID		Contai	ner Type	No. of Co	ntainers	Prese	rvation	Analys	is Req.	Time
RE/09	+03-6W.	121515		L vials	3			ICI	vo		1040
			1-L	amber	2		no	one	1,4-Di	oxane	1040
											
Commer	its										4
								<u>li</u>		П	
Signature	Rich	Pager	-	30					Date	12-15.	14.
		11							-		



Volume /	Linear Ft	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

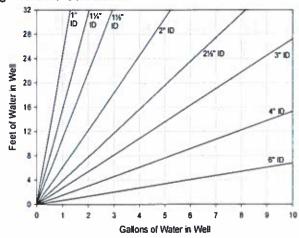
(continued fro		1	i i	l n .n	i š	1	1 .	(e)	F 8	
Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	
0955	લ	14.25	4.46	9.016	5,79	116,4	285	boo	39.7	new - many was up.
1905	9.5	14.25	4.45	0.016	5.57	118.2	3.08	ර්පත	39.7	clest
1015	11.0	14,28	4.44	مارى، ت	5.79	12014		600	39.4	cleas.
1025	12.5	14.28	4.48	0,016	5,79	1200	276	- ៤ ΦΦ	39.7	Clear
1035	₹14. φ	14.28	4.49	Q.Q16	5.78	120.1	2.70	рфф	39.7	Clea
Sample	@ 104	P								
• •							,	- "		
							,		4	
							*			
				-						,
										9 20
				<u> </u>						
				,						
	,									1 l



Pum

Well ID:	RE105	PI	
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011 1			41			D-4 (1) 44	21.77	145		10.1	
Client: 1 Project No:		WIRP Be 60266526				_ Date: 13	21 17	<u>/ 15</u>	Time: Start Finish		am/pm
Site Location:		- 1							1711111511	1120	am/pm
Weather Con	•	Line		eszele 5	-6°	Col	lector(s):				
					_						<u> </u>
1. WATER L			_		-						
				c. Length				. (a-b)	Casing Dia 4-inch PVC		aterial
b. Water T	Table C	epth <u>39</u>	6,14	d. Calcula	ited Syste	m Volum	e (see back)	/3:	1001		
2. WELL PUI a. Purge N			Geotech	bladder pu	mp with d	rop tube a	assembly				
b Accents	nce C	riteria defi	ned (see	workplan)							
- Tempe	rature		·		Turbidity	± 10% ± 10mV		- D.O.	± 10% (val	ues >0.5	mg/L)
- Sp.	•	± 3%		- D	rawdown			Remove a	minimum 1	screen v	olume
c. Field Te	esting E	Equipment	t used:	(t) (c)	Make YSI	2 L	Model 550 D	25	Serial Num	ber	5.0
					Solinis		WL	n	16941		F-\$570/
PON 7915	l				MANO		HIPS		4802		
V ()	lume noved	Temp	pН	Spec. Cond.	DO	ORP	GED Turbidity	Flow Rate	USI6		r/Odor
10 10 10 10 10 10 10 10 10 10 10 10 10 1	ters)	Temp. (°C)	<u> </u>	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	Depth to water (ft)	COIO	r/Odor
930		14:39	4.78	0.084	5.50	118.7	0.18	700	38.37	Clear /	16 oder
0940 5ga	.tlwn's	14.41	4.65	0.086	3.00	119.7	0.46	650	38.41		
0950		14.42	4.66	0.084		119.4	0.39	650	38.44		
1000		14.42	4.65	0.085		121.4	0.36	675	38.46		
1.00	llms	14.43	4.66	6.084	2.82	123.2	6.23	675	38-47		
1010		1444	4.65	0-084	2.80	124,8	0.28	675	38.48		
d. Accepta		riteria pas	s/fail		Yes	No	N/A	<u> </u>		(continued or	n back)
	•	volume be									
	•	turbidity b ters stabil		ieu		H	H^{\pm}				
-		A - Explai		-							
	-										
3. SAMPLE (COLLE	CTION:		Method:	Geotech I	bladder p	ump with o	lrop tube as	sembly		
Sample ID			Contair	ner Type	No. of Co	ntainers	Prese	rvation	Analysi	s Req.	Time
EJOSPI-	1 1 1 1 1 1 1 1			L vials	3			ICI	VO		1030
RE10501 -	-6-W-	131715	1-L a	amber	2	-	ne	one	1,4-Die	oxane	1030
Comments			Υ.,	-							
	-							4			
			£53								
Signature				- 1					Date	= =	



Volume /	Linear Ft	. of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
_ 1	0.0408	0.1544
1.25	0.0637	0.2413
1,5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

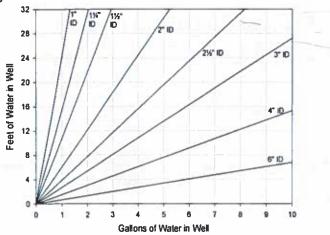
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

continued fr	om front)									
Time (24 hr)	Volume Removed (Liters)	(°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	(ml/min)	Depth to water (ft)	Color/Odor
1015	11,5gal.	14.42	4.64	0.0%	2.78	126.3	0.2.2	675	3850	
1020		14.43	414	0.086	2.72	127.7	0.19	675	3850	
1025	13.5gal	14.43	4.65		2.72	129.3	0.17	675	28.50	
			1100	0,100						
	J. 04					Ei,				
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			17				"			
			TD- 2	l .				1	L	



Well ID:	RE10502	
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Client: Navy NWIRP Bo				Date: <u>1</u>	21 17	<u>/ 15</u>	Time: Start_	
Project No: 6026652		(<u>C</u>		-			Finish_	<i>//30</i> am/pr
	neoln.	1		- 00	llector(s):			
vveather Conds:	Cast, Ariz	rle 50			ilector(s).			
1. WATER LEVEL DATA: (r	neasured	from Top	of Casing	g)				
a. Total Well Length	- 0	4				•	Casing Diar 4-inch PVC	meter/Material
b. Water Table Depth	88.80	d. Calcula	ated Syste	em Volum	e (see back)			
a. Purge Method:	Geotech	bladder pu	mp with d	irop tube :	assembly			
b. Acceptance Criteria de	ined (see	worknlan)						
- Temperature ± 3% - pH ± 0.1 ui	ı i ,	- ,	- Turbidity - ORP			- D.O.	± 10% (valu	es >0.5 mg/L)
- Sp. Cond. ± 3%		- 0	rawdown	< 0.3'		Remove a	minimum 1 s	screen volume
c. Field Testing Equipmer	nt used:		Make		Model 55-5		Serial Numb	
			Hana	XJII	98703		80211	
Volume <u>Time Removed Temp.</u>	pΗ	Spec. Cond.	DO	ORP		Flow Rate		Color/Odor
(24hr) (Liters) (°C)	100	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
930								
440 14.57	5.43	1.052	591	149.4	0.25	475	36.95	
945 14.61	5.25	0.052	4.53	1597				
950 14.61	5.06	0.052	3.84	1649				
P055 14.61	4.95	0052	3.56	169.4		500	3682	
1000 14.60	4.85	0.053	4.64	179.4				
d. Acceptance criteria pa Has required volume b Has required turbidity l Have parameters stab If no or N/A - Expla	een remov been reach lized		Yes	20	N/A		(c	continued on back)
3. SAMPLE COLLECTION:	£	Method:	Geotech	bladder p	ump with o	lrop tube a	ssembly	
Description	01-1-	T	No of O		Dona		A	D Ti
Sample ID <u>RE105p2-612-0217</u>		ner Type L vials	No. of Co			ervation ICI	Analysis VOC	•
KCIOINE GIO GEN		mber	2			one	1,4-Dio	
I W					П		XII	
Comments								
	77							
								2
Signature Paul	Kn	11					Date	12/17/18



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

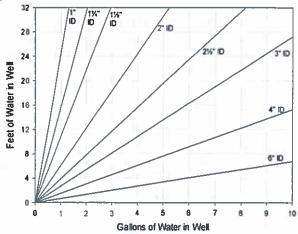
Well ID: RE105 bz 2 930

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbi <mark>d</mark> ity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1005	5gal	14.62	476	0.057	5.47	184.9	0.17	500	38.75	
1010	0	14.64	4.69	0.057	5.45	191.0			36.75	
1015		14.62	4.70	0.057	5.50	193.8	V	4.	X	
1020	17 6/24	14.61	465	0,057	5.47	146.2	0.14		Sec.	<u> </u>
1025		14.60	452	(1.057	5.45	199.5		500	36.75	
1030		14.59	4.62	0.057	539	203.3	0.14		166	
1035		14.60	4.60	0.057	5.43	20 2.9				
1040	1000	1458	4.64	1057	5.38	203.0				
1845		1450	4.58	0.057	5.34	202.9		500	36.73	.V=
1050	1250	14.59	4.58	0.057	5.31	704.1	010			
1255		14.59	4.59	0.056	432	205.0	J 5		T	
1100	130al	14.60	4.58	0.056	5.28	205.7	. =	500	36.78	·
	/						- 1			
1110							= =			samle
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		_								
									<u> </u>	
		100						0 = 0		
	, v						-			·- <u> </u>



Well ID:	RELOZA	1	

Client: Project I		6026652	6		11	_ Date: <u>1</u>	2118	/ 15	Time: Start Finish	745 1160	_am/pm _am/pm
Site Loc Weather	ation: r Conds:		redu		П	- Co	llector(s):				
1. WAT	ER LEVEL		· .		of Casin		`				
a. To	otal Well Ler	ngth <u>5</u>	30	c. Length	of Water	Column			Casing Dia 4-inch PV		terial
	ater Table [LICO	d. Calcula	ated Syste	em Volum	e (see back)	- 1211			
	L PURGE Durge Method		Geotech	bladder pu	ımp with o	Irop tube :	assembly				
	ceptance C				_				101	X 1 (1)	
- Te	emperature	± 3% ± 0.1 ur	,			± 10m\			± 10% (val		
	eld Testing I		t used:		Make Y S i		Model SS6 m 6		Serial Num ひらる	nber	Julie
					HANNA		8703		0800	· · · · · · · · · · · · · · · · · · ·	
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	рН	Spec. Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	<u>Color/</u>	'Odor
0834					BL T				0.11		- 4
0835	.5	13.26	6.14	0.08	7.70	204.	8817	400	2 200	cloudy	
0845		13,80	5147	0,080	5.70	12414	61.2		42.28	cinq	P
850	1.5	13184	5,53	01080	5.55	29.7	55.1	325	42.28		
855	2,5	13.80	5,48	0.079	5.17	75.5	38.5	*	11 123		100-7
ÁŒ	3	13.81	5,50	0.079	4.93	37.8				156	
= Ha	cceptance c as required as required ave parame If no or N/	volume be turbidity be ters stabil A - Explai	een remo een reaci ized in below.	hed	Yes	10%	N/A	for tho		(continued on	back)
3. SAMI	PLE COLLE	ECTION:		Method:	Geotech	bladder p	ump with d	rop tube as	sembly	75	
Sample <i>RE</i>	ID 107111-6	W-171819	40-m	ner Type nL vials	No. of Co			rvation Cl	Analysi VO	Cs	Time
			1-L:	amber	2		no	one	1,4-Did	oxane	1040
Commer	nts		1								<u> </u>
Signatur	e								Date		



Volume / Linear Ft. of Pipe										
ID (in)	Gallon	Liter								
0.25	0.0025	0.0097								
0.375	0.0057	0.0217								
0.5	0.0102	0.0386								
0.75	0.0229	0.0869								
1	0.0408	0.1544								
1.25	0.0637	0.2413								
1.5	0.0918	0.3475								
2	0.1632	0.6178								
2.5	0.2550	0.9653								
3	0.3672	1.3900								
4	0.6528	2.4711								
6	1.4688	5.5600								

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

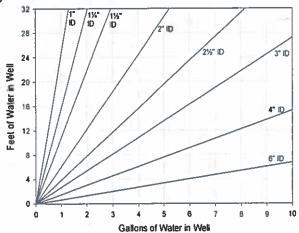
Well ID: RE107D1

(continued fo	om front)									
	Volume			Specific				Flow	200	
Time	Removed	La company of the com	pН	Cond.	DO	ORP	Turbidity	.79	Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)		
905	,	13.76	5.53	0.080	4.73	138.9			42.33	
410		13.69	5.48	0.080	4.57	140.5	h serre			
915		13.49	5.44	0.081	4.37	1445	_			
920)	5gal			٤						
125	*	13,97		6.087	4.30	14715		456	42.12	clouly
936	6	13,95	5.46	0.082	4.35	14915	209			
935	7	14103	5,47	01082	4.0	1508	252		41.88	
940	9	14103	5.52	6.683	3.92	150.6	295	500		cloudy
945	9.5	14.08	5,53	0.083	3.87	151.7	326		41.75	5
950	1020	14.01	5152	0.083	3,83		31351	4		٠
955	10.2	13,48	<i>5</i> ,53	0.083	3,82	1514	390	500	41,78	Cloucky
1000	11	14,06	5.51	0.083	3,84	1489				
1005	12.	143.94	5158	0.083	3.91	14915	433		71.84	Clour.
1010	125	13,94	5,49	0.083	3.92	151,0	384	525		Cloud
1015=	13	13.97	5.51	0.083	3,90	15012	387			
1020	14	13.92	5151	0.083	3,94	149.2	749	525	41.85	
1035	14,5	13.86	5.53	6.083	4,07	1488			,,,,,	Clary
1030	15	13,89	5.52	0.083	4,07	149:0				
1035	16.5	13,91	Sisz	0.083	4.05	152.9	* 6	5250	41.80	
.0 / /	10.7	- 1			-10-4				A North Control	
1240		1				123				confla
210									,	20410
	,					3.0				
					2.25	7.018				· · · · · · · · · · · · · · · · · · ·
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4					. 1	F 1 1 1 1				
	 	2-der			- 17			-		·
··-								,		
						3.50	4			



Well ID:	RE10702	
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Client:	Navy I	WIRP B	ethpage			Date: 1	21 18	/ 15	Time: Start	745	am/pm
Project I		6026652		Hilli		- -				1100	_am/pm
Site Loc			resem			_					_
Weathe	r Conds:	64	nedu S	00		_ <u>Co</u>	llector(s):				
	ER LEVEL										
	otal Well Le							-	Casing Dia 4-inch PV		aterial
b. W	ater Table I	Depth <u>4</u>	F2.59	d. Calcula	ated Syste	em Volum	e (see back)	/3.]			
	L PURGE !										
a. Pu	urge Method	d <u>:</u>	Geotech	bladder pu	ımp with c	rop tube	assembly		- 1		
- To	cceptance C emperature - pH - Sp. Cond.	± 3% ± 0.1 uı			- Turbidity	± 10mV			± 10% (val		
			4.			1		110111010 0			Sidiffe
C. FIE	eld Testing	Equipmer	nt used:		Make Y <t< td=""><td></td><td>Model 556</td><td></td><td>Serial Num</td><td></td><td>61</td></t<>		Model 556		Serial Num		61
					Hanna		19703	3	8021		
										81	
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	рН	Spec. Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	/Odor
815		1-1			-1			- 1		ON	,
890	5.5	1458	5.62	0.072	5.97	241.2	8-85	700	Ce	- J.	
840	5	1459	5.65	0.075	4.93	242.6	215	22.		alaud.	
845	6	14.59	4,61	-01075	4172	24/12	21/2	700	42.6	cloud	
850	7,5	1460	5.5%	0.075	4,59	2406	19,5	700	78070	Clove	
855	9	14:55	5,67	0.076	4.35	240	203	700	= -	V	
	cceptance c			10107A	Yes	No	N/A			(continued on	back)
Ha	as required as required ave parame If no or N	turbidity b	een reac lized							H	
3. SAMF	PLE COLLE	ECTION:		Method:	Geotech	bladder p	ump with d	rop tube as	sembly		-
Sample I	1D 17/12-5W	121915		ner Type L vials	No. of Co	ontainers		rvation ICI	Analysi VO		Time 930
				amber	2			one I	1,4-Dic		
	- No				-			_			_
Commer	nts										11
	<u></u>								-	<u> </u>	Fig.
			<u> </u>	. I							
Signature	e /	aul	Karet	ħ					Date	12.1	8-15



Volume / Linear Ft. of Pipe											
ID (in)	Gallon	Liter									
0.25	0.0025	0.0097									
0.375	0.0057	0.0217									
0.5	0.0102	0.0386									
0.75	0.0229	0.0869									
1	0.0408	0.1544									
1.25	0.0637	0.2413									
1.5	0.0918	0.3475									
2	0.1632	0.6178									
2.5	0.2550	0.9653									
3	0.3672	1.3900									
4	0.6528	2.4711									
6	1.4688	5.5600									

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

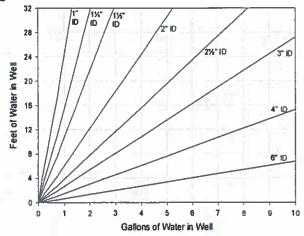
OIN!

(continued fr	om front)									
Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	(ml/min)	Depth to water (ft)	Color/Odor
0900	10	14,59	5,67	0.026	4.20	2396	255	700		
8905		1457	5.67	0.016	4.02	239.7		X.		
910	=	14.60	568	0 276	3 75	2-39,6				
915	1394	14.56	5.68	1.077	3-69	2391	47.2			
920		1455	5.69	1.077	3.59	237.8	46.9			
925	1560	4.56	5.69	0.177	3.49	238,1	44.5	700	42.68	
430	16.5									Eary 1/1
170		750 Vi								
11										
·-										
					K1					
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Well ID): R	三	10	7-	03

Client: Project Site Loc Weather	No:	602665				_	12 / 7 Sq	/ 15	Time: Start Finish	13+5 am/pn 1600 am/pn
a. To	TER LEVEL otal Well Le	ngth	725	c. Length	of Wate	r Column			Casing Dia	ameter/Material
	L PURGE I		Geotech	bladder pu	ımp with	drop tube	assembly	Basser's of		
-Т	cceptance (emperature - pH - Sp. Cond. eld Testing	± 3% ± 0.1 u ± 3%	nit	u u	- Turbidity	y ±10% P ±10m\ n <0.3'				ues >0.5 mg/L) screen volume
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	μЦ	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate	Depth to water (ft)	Color/Odor
14:10	501	13 47	6-15	0.092		24.9	642	500	43-6	Munky
14:15		1345	6-13		5 64	250	136	500	43.6	mente
1420		13.77	6.07	0.075	4.74	16.1	650	200	43.2	
M.25		13.92	5.93	0.08	5.48	12.2	268	Çoo	45.21	11
14:30		13.86	5.74	0.038	5.7)	15-0	210	(00	43.21	11
1435		13.84	5.69	150.0			90.1	200	43.20	£a .
Ha Ha	cceptance c as required as required ave parame If no or N/	volume b turbidity b ters stabil	een remov een reach lized		Yes 7	No 	N/A		(continued on back)
3. SAMF	PLE COLLE	CTION:		Method:	Geotech	bladder p	ump with d	rop tube as	sembly	
Sample I <i>RE 107</i>	D 03-GW-12	2915	40-m	ner Type L vials	No. of Co	ontainers	Н	rvation Cl	Analysis VOC 1,4-Dio	Cs
Commen	ts		1-2 6				TIC.	ne	1,4-010	Adile
Signature									Date	



Volume /	Linear Ft.	Volume / Linear Ft. of Pipe										
ID (in)	Gallon	Liter										
0.25	0.0025	0.0097										
0.375	0.0057	0.0217										
0.5	0.0102	0.0386										
0.75	0.0229	0.0869										
1	0.0408	0.1544										
1.25	0.0637	0.2413										
1.5	0.0918	0.3475										
2	0.1632	0.6178										
2.5	0.2550	0.9653										
3	0.3672	1.3900										
4	0.6528	2.4711										
6	1.4688	5.5600										

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

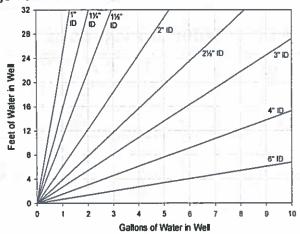
Well ID: RE107 D3

Well ID:	16410	705		<u> </u>	144					
Time (24 hr)	om front) Volume Removed (Liters)	Temp (°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1440		13.84	C.67	0.033	5.99	16-8	_	750	43.71	Clearing
1445	13/17	13.85	5.66	0.033	6.14	17.4	84.1	- En	1521	
1450	10901	13.87	C. Go	0.033	6-38	18.2			45.21	11.
1455		13:87	5.66	0.032	6-84	18.1		750	15.24	Estelle -
1500		13.87	5.66	0.033	7.37	18.1	61.2	250	43.21	16
15:05		13.99	5.65	0.033	7.74	29.5	58.6	250	47.71	e 1.7
1510		14.02	2.65	0.037	7.41	20.6	45.2	250	13	4
1515	[Zgel	14.03	5.65	0.037	7.42	70.7	48.4	22.0	T 18	E92 49 L. T.
7				- 11 3			2017/309-	=' ,		2 At = 77. 1
		- 1	N-TE	High had				_		
	= 0 I	P. T.		,		1 7 _	X	SOM	II ,	2 170
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		- A			1.5					



Well ID:	RE 10EDI	ALLIN TO S

Client:	Navy	NWIRP E	Bethpage	# U P		Date:	12/22	/ 15	Time: Start	845 am/p
Project		602665				_				10 30 am/p
Site Loc			a +CI			_				
Weathe	er Conds:	Over	cost . s	prinkles	- 80'1	C	ollector(s):	-tc	- %	9
a. To	TER LEVEL otal Well Le	ength	555	c. Lengt	h of Wate	er Column		_ (a-b)	Casing Dia	ameter/Material
b. W	ater Table	Depth	10.18	d. Calcu	lated Sys	tem Volun	ne (see back)		
	L PURGE		Geotech	n bladder p	ump with	drop tube	assembly			T a
- T	cceptance (emperature - pH - Sp. Cond.	± 3% I ± 0.1 u						- D.O. Remove a		lues >0.5 mg/L) screen volume
c. Field Testing Equipment used:				Hinna	Make		Model +1-984	·03	Serial Num	
					157		556 M	175		
Time (24hr)	Volume Removed		рН	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate	Depth to water (ft)	2.× Color/Odor
or 50			- 1-	- 1,		- 4				Punt on
09@0	Addition	14.62	5,3 3	0.078	5.64	239,1	2.29	600	40.24	ceal
905	11 10	14.64	C. 17	0.096	7.54	259.1	1.59	600	40.24	chain
AIO		14.63	5.12	0.096	7.73	268.4	0.99	600	40.24	clear.
920		14.60	5.11	0.096	7.82	277.8	0.81	600	40.24	fe
430		14.58	€.11	0.096	7.91	274.1	0.79	600	40.24	61
Ha Ha	cceptance of as required as required ave parame If no or N/	volume b turbidity b ters stabi	een remo een reaci lized		Yes TITI	No	N/A			continued on back)
. SAMF	LE COLLE	CTION:		Method:	Geotech	bladder p	ump with d	rop tube as	sembly	
Sample ID Containe			L vials	No. of Co	ontainers		rvation Cl	Analysis VOC	Cs 100S	
Elogoi -	GW-12222	.015	1-L a	amber	2		no	ne	1,4-Dio	xane
ommen	ts									
Signature									Date	



Volume /	Linear Ft	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well) 15 ft = 37.1 L / 9.8 G

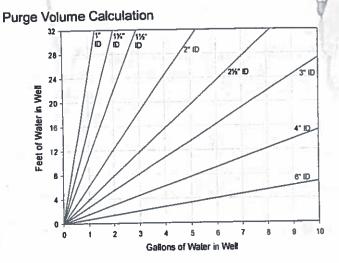
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Time (24 hr)	volume Removed (Liters)	(°C)	рH	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
940		14.56	5-60	0.096	7.80	278.3	0.79	600	40.24	clear
950	*	14.56	1.10	0.096	7.63	781.1	0.55	600	40.24	= 1/1
100	- San	_عاد_						-		
_		_ #			= 500		1. 1.1	-300		
						-				
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				1465		11	740			
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		_	_	5.5	~ =	15.35	=	100		
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Well ID:	RE108DZ	
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Client:	Navy	NWIRP	Bethpage	11,5 58		Date:	12/22	/ 15	Time: Star	+ 821	7/
Project	No:	60266			n (2)		12. 60	7 10		h_/030	
Site Lo		_ Co	one & C	cil							
Weathe	er Conds:		20	ACL			collector(s):	R 5	<u> </u>	W	<u> </u>
1. WA	TER LEVE	L DATA:	(measure	ed from To	p of Cas	ing)	1 1		-5	X Till	
a. T	otal Well L	ength		c. Leng	th of Wat	er Column		_	Casing Di		faterial
b. W	/ater Table	Depth _	40.71	d. Calcu	ulated Sys	stem Volui	ne (see back	t)	4-inch PV	<u> </u>	
	L PURGE		# #	#1:			(
	urge Metho		Geotec	h bladder p	oump with	drop tube	assembly				
b. Ac	cceptance (Criteria de					82			- 22	
- T	emperature	e ± 3%	J	c workplair		ty ± 10%		- D.O.	± 10% (va	lues >0.5	ma/L)
		1 ± 0.1 t	ınit		- OR	P ± 10m			_ 1070 (va	1005 - 0.0	mg/L)
	- Sp. Cond	. ± 3%	alv pic	130 3	Drawdow	n < 0.3'	3	Remove a	minimum 1	screen v	olume
c. Fie	eld Testing	Equipme	nt used:		Make		Model		Serial Nun	nber	
					nna		4198703		U8021		
					1	5	56 MPS		54577		10
	Volume			Spec.		- DU	- 4				
<u>Time</u> (24hr)	Removed (Liters)	(°C)	рH	Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	/Odor
850	_ 45_	14.45	4.91	0.083	5-12	79.5	0.81	550	40.40	chen	
900	- 1	14,44	4.86	0,083	4.12	58.1	== -		40 40		
905		14.45	4.86	0.083	4.10	68.0	0.37	550	40.72	-	
9100		14, 42	4.79	0.88,	4,92	50,6	0.33	5 50	14.70		
920		14.56	4.75	8.081	5.41	44.5	0.25	₹50	40.7Z	clear	
95		1435	4.74	@.081	6.36	43.1		550	40, 72	4500	
	ceptance c				Yes	No	N/A			continued on t	
	s required to										,
	ve paramei			ieo		片					
	If no or N/						-				
								<u> </u>	- + -	4-	
SAMP	LE COLLE	CTION:		Method:	Geotech	bladder er	ison with d				
				mounou.	Ocolecti	biaddei po	mp with ar	op tube ass	embly		
imple ID					No. of Co	ntainers	Preser	vation	Analysis	Req.	Time
			_ vials mber	3		HC		VOC		929	
			i-L a	IIIDG!	2		nor	ne .	1,4-Diox	kane	100
mments	s						- 15.43	1			
					14				-		
	11 11 11			- 80	10-1						-
nature	/		N.								
	- L								ate	201	
									LowFlow-GWa	- Dec 2015	.xlsx



Volume / Linear Ft. of Pipe Gallon Liter ID (in) 0.25 0.0025 0.0097 0.0217 0.375 0.0057 0.0386 0.5 0.0102 0.0869 0.75 0.0229 1 0.0408 0.1544

0.2413 1.25 0.0637 0.3475 1.5 0.0918 0.6178 2 0.1632 0.9653 2.5 0.2550 1.3900 3 0.3672 2.4711 4 0.6528 6 1.4688 5.5600 One screen volume (4-inch well)

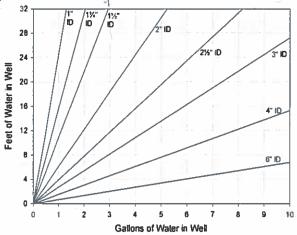
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Time	Volume Removed (Liters)	(°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0830		14.30	4.23	0.00	5.43	40.8	70,23	550	40.72	*
८५५५ क		1432	4.75	0.082	542	38.1	9.20	55m	40.76	
Pro	Sam	ole.		100	-SE-		1			
							-			
			-		, F					
				- 16	V.		Complex of S		-	
		and all places	1				2.0	100		
	2 .	9	,		3 (1)	T		12 T	·	
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	T- PORK		*							
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		-	-	+	-				1 1	



Well ID:	RE11401	
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	U 1 5247 1 W		100								
Client:	Navy N	WIRP B	ethpage			Date: <u>1</u> 2	2121	/ 1 <u>5</u>	Time: Start	1100 3	am/pm
Project N	No:	6026652	6	П					Finish	1330 3	am/pm
Site Loc			DV.1								
Weather	Conds:	part	4 sun	ny 560		Col	lector(s):				
1. WAT	ER LEVEL			/		g)		8			
	otal Well Lei							. 10	Casing Dia 4-inch PV	ameter/Mate	rial
b. W	ater Table [Depth <u>ろ</u>	1.68	d. Calcula	ated Syste	m Volum	e (see back)	13.			
	L PURGE I		Geotech	bladder pu	ımp with d	rop tube a	assembly	¥ °-	-		
b. Ac	ceptance C	riteria del	fined (see	workplan)							
	emperature	± 3%			- Turbidity			- D.O.	± 10% (val	ues >0.5 mg	3/L)
	- pH - Sp. Cond.	± 0.1 ur	nit	- n	ORP - Orawdown		20	Remove a	minimum 1	screen volu	ıme
				7.		114.		TCHIOVE G			
c. Fie	eld Testing	Equipmer	nt used:		Make /SI	5	Model 5		Serial Num	1ber 965/ <i>650</i>	573/1
					13-L	0.	ي ر		ω_{III}	100/1030	· 27 X
				i i da		CILIVI	, 1 1		1	N I	RE IT
H	Volume			Spec.		0.00	<u> </u>			0 1 (0	Short.
<u>Time</u> (24hr)	Removed (Liters)	Temp.	р <u>Н</u>	Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/O	<u>dor</u>
	(Ellers)	1.7		(morom)	(ilig/L)	(1114)	(1110)	(11.3711117)	Water (It)	GN	
1130	-	13.95	1.73	0,066	13,36	142.7		350	31.60	CLOUDY	
1145		13.44	6.13	0.068	9.00	142.7		0,50	31.60	200-107	1.1.3
11 50		18,53	5.94	0.070	6.37	145.5		350	.51.60		
1155		13.56	5.92	0.070	6.36	143.4		900			71.7
1200		13.57	590	0,071	4.33	140,7		500	31.62		-
<u>, </u>	cceptance o			10,011	Yes	No:	N/A	3-0		(continued on ba	
H:	as required as required ave parame	volume b turbidity b	een remo een reacl lized						42		- I
3. SAMI	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with c	frop tube a	ssembly _		
Sample	ID		Contai	ner Type	No. of Co	ontainers	Prese	ervation	Analys	is Rea.	Time
	401-6W-	122115		L vials	3			ICI	VO	Cs /	1322
			1-L:	amber	2		ne	one	1,4-Di	oxane	
		J. 1		10) 14	KING N	1 . 1	. ~ 1	1 -		11 .1	
Commer	Comments Bothy daphly is you at least 40 that houled is one of the well.										
	thing,	LITU	15 16-	The dist	+ Le to	10 11 m	Allen	d ka cla	ch de lin	e leneth i	24
	<i>→</i>			······································			+110	ntothe &	orrection	74	-/
Signatur	е	Par	A Kuc	do					Date	12/2	1/15



Volume / Linear Ft. of Pipe									
ID (in)	Gallon	Liter							
0.25	0.0025	0.0097							
0.375	0.0057	0.0217							
0.5	0.0102	0.0386							
0.75	0.0102	0.0869							
0.73	0.0223	0.1544							
1.25	0.0400	0.1344							
1.5	0.0037	0.2413							
1		3.3 3							
2	0.1632	0.6178							
2.5	0.2550	0.9653							
3	0.3672	1.3900							
4	0.6528	2.4711							
6	1.4688	5.5600							

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

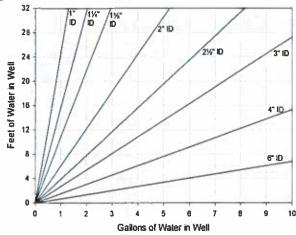
RE 1140-1 21130

(continued fro	om front)									
[Volume			Specific				Flow		
Time	Removed		pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
1205		13,64	5.74	0.072	3.00	143.2		500	31.6	
1210	1	13.64	5.72	6.072	2.92	143.8	160.4			
12/5	5901	13.88	5.75	0.073	2.75	13858				
1220		13.77	5.81)	0.673	3.34	138:7	37.04		3/,62	
1225		13.84	5.83	0.073	4.00	137.0				
1230		1379	5,81	6073	3.02	140.3	27.33		31.62	
1235	_	1376	573	0.073	2.59	138.3	2547			
1240		13.87	5.73	0.073	280	143.5	_	_	_	
1245		13.90	5.73	0.073	2.61	146.3	1 3		31.64	17. 1/4
	DEAL	13.81	5.80	0.073	2.46	147.5	21.60			
1755		B 87	5.78	0.073	2.25	149.3	= 7			
13: or		13,53	5.79	0.073	3,98	149.1	21.07		31.64	
1305	1	13.95	5.83	0.073	298		21.47	500	,	
1310		13.86	5.83	0.073	2.77	147.9	27.08			
1315	13901	13.55	587	0.073	262	148.7	21.00			
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1320			;							sage
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	\vdash									<u>.</u>
			. 1	47				-		



Well ID:	RELIYOZ	
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Client:		WIRP B				Date: <u>1</u>	21 16	<u>/ 15</u>	Time: Start		_am/pm
Project N		6026652		0	- .				Finish	1630	am/pm
Site Loca Weather		-	Im Pd			Col	lector(s):				
	ER LEVEL tal Well Lei	•		_	_			(a-b)	Casing Dia		aterial
b. Wa	ater Table (Depth		d. Calcula	ated Syste	m Volum	e (see back)				
	_ PURGE [rge Method		Geotech	bladder pu	ımp with d	rop tube a	assembly			N	
b. Acc	ceptance C	riteria de	fined (see	workplan)							
- Te	mperature				- Turbidity			- D.O.	± 10% (val	ues >0.5	mg/L)
_	- pH Sp. Cond.	± 0.1 ur		- r	ORP - Prawdown	± 10mV < 0.3'		Remove a	minimum 1	screen v	olume
	d Testing					-0.0	Model	TCHIOVC &	Serial Num		Oldine
- 4-	<u> </u>		-	<u> </u>			4				
	Volume			Spec.							
<u>Time</u>	Removed		pН	Cond.	DO	<u>ORP</u>		Flow Rate		Colo	r/Odor
(24hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)		_
1345										OX	
1353					1	_		Dari		blowing	سلام
1435	res		194 200					400		rese	blad
1445	3 900	14.30	5.85	0.069	3.29	114.6	44	50n	32.03		
1450				=			14				
14155		14.13	6.08	0.072	1.94	107.3	717	475	42.6		7 - 7
Ha Ha	ceptance of as required as required ave parame or N	volume b turbidity t eters stabi	een remo been reac ilized		Yes	No	N/A			continued or	n back)
3. SAMF	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with c	frop tube a	ssembly		
Sample I				ner Type	No. of Co	ntainers		ervation	Analysi	•	Time
REII9	102-64	1-1216/		L vials amber	2			ICI	VO	_	1615
				11.05			1				
Commen	its	1355	p.11	Dung	nesteb	blada	ler				1
Signature		ı		_				1	Date		



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

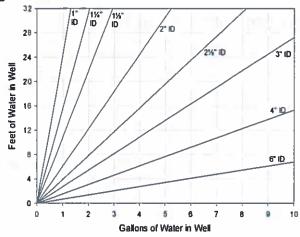
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro										
Time (24 hr)	Volume Removed (Liters)	Temp (°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)		Depth to water (ft)	Color/Odor
15:00		14.34	5.99	0.072	1.59	111,4		475	37.00	
15:05		14.36	5.98	0.071	1:57		26.7	475	31.97	
15:10		14.30	5.89	0 073	1.11	115.0	.3.5. <	475	31.96	
K 15		1-1,24	5.89	0 072	0.93	113.8	32.5	500		
15:00		141.33	6.04	0.072	1 00		35,6		31.98	
15:25		14.35	5.97	1 OF1	0.95	107.0	34,4		31.97	
15:30		141.38	6.00	0.072	0.72			475	3197	<u> </u>
1535		14.34	6.01	0.071	0.86	10-19	33.4	_ !		
15,40				0.07/	0-75	184.6	31.0	500	31.97	
15.15	10 Grel			0.070	6,66	103.8	30.5	500	21.91	
1550			5.98		0.70	102.7.	-2			HE .
1555		14.32	5,99		0.63	101.7	31.3			
1600	12001	1432	5,99	0.071	1.63	101.4	33.4		31.84	
1605	13gel	14.28	5.99	1.070	0.63	100.9	35.7			
1610	01	14.28	5.99	0.610	0.66	mq	34,1			
1615					···					Sam de
*										
		li li								
				* ***						
	_									
										11 P
	16									



Well ID:	RE11403	
Well ID:	RE11403	

CONSULTANTS					
Client: Navy NWIRP Bethpage	11	Date: 12/16	<u>/ 15</u>	Time: Start _	
Project No: 60266526	lullu			Finish_	/ <i>830_</i> am/pm
Site Location: Weather Conds: Sunny p	(10	Collector(s):			Y
Weather Conds.	20	Collector(s).			
1. WATER LEVEL DATA: (measured f		•			
a. Total Well Length	c. Length of Water	Column	(a-b)	Casing Diar 4-inch PVC	meter/Material
b. Water Table Depth 32.35	d. Calculated Syste	m Volume (see back)			
2. WELL PURGE DATA					
a. Purge Method: Geotech t	oladder pump with di	rop tube assembly			
b. Acceptance Criteria defined (see v					
- Temperature ± 3%	- Turbidity		- D.O.	± 10% (valu	es >0.5 mg/L)
- pH ± 0.1 unit - Sp. Cond. ± 3%	- ORP - Drawdown	± 10mV < 0.3'	Remove a	minimum 1 s	screen volume
c. Field Testing Equipment used:	Make VSI 53	Model	AC	Serial Numb	
	132 23	6 MFS	()3 (
Volume <u>Time Removed Temp. pH</u>	Spec. Cond. DO	ORP Turbidity	Flow Rate	Depth to	Color/Odor
(24hr) (Liters) (°C)	(mS/cm) (mg/L)	(mV) (NTU)	(ml/min)	water (ft)	<u> </u>
14:20 - 14.41 10.00	0.073 9.65	176.9 -	500	50.07	- 1
14:40 - 14.39 5.93		218.0 29.3	500	_	Clear oder
14:45 - 14.405.63	·	224.3 -	500	32.25	
14:50 - 14.37 5.63		224.9	500	32.26	
K1:50 5 Gal 4.37 5.60		208.52,75	500	32,24	
5:05 - 14.39 5.52		233,41.82	560	32.07	
d. Acceptance criteria pass/fail	Yes	No N/A		(c	continued on back)
Has required volume been remov Has required turbidity been reach					
Have parameters stabilized		_ 👸 👸			
If no or N/A - Explain below.					
		21			
3. SAMPLE COLLECTION:	Method: Geotech I	bladder pump with o	lrop tube as	ssembly	
Sample ID Contain			rvation	Analysis	
BE114D3-GW-121615 40-ml			ICI	VOC	
RE114 D3-6N-101615- 1-La	mber 2	ne	one	1,4-Dio	xane
Comments					
		17			
Signature				Date	



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

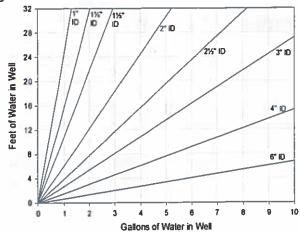
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

well iD:										
(continued fro				l' Cassies		ı		l rieu il		
Time	Volume Removed	Tomp	L	Specific Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Color/Odor
(24 hr)	(Liters)	(°C)	рН	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)		Color/Odor
	(Liters)		4.00	0.034						
15:10	-				5.71	232.9		<i>5</i> ∞	3227	
15.15				0.033	5.74			5 60	30.05	
15:20		14.41	5.50	0.034		236.1	1 32	500	32.26	
15:05	A			0.034	5.7G	238.4	1.47	560	07	
15.50	10 Gal		5.48		5.78	237.2	•	500	32.07	
15.35				0.053	5.18	2403		500	32.26	
15:40				6.033		241,6	1,48			
1545				0.033	5.78	241.0	•	500	3225	
15:50	13.5	14.3	5.45	0. 633	5.78	245,2	1,40	500	32.06	
15:55	Ga									,
16:00		1 oct	San	ple						
16:05			•						. ,	·
16.10										,
16:15										
16:00										
11.30										
	,									
								, ·		· <u>·</u>
		V2								
_						_				
				·		•	*			
		-								
_										



Well ID:	RE	120	DI	
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Client:	Navy N	WIRP B	ethpage	e 162		Date: 1	21 18	/ 15	Time: Star	1 (330	am/pm
Project I		6026652		14					Finish	1530	am/pm
Site Loc			elly	1 10				<u></u>			
Weathe	r Conds:	01	ouly	450		Co	llector(s):	EV	N Auclo	<u>u</u>	_
1. WAT	ER LEVEL	DATA: (n	neasured	from Top	of Casing	g)			~		
	otal Well Ler								Casing Di 4-inch PV	iameter/Ma	aterial
b. W	ater Table [Depth $\underline{3}$	7.45	d. Calcula	ated Syste	m Volum	e (see back)				
2. WEL	L PURGE C	DATA									
a. Pu	irge Method	l <u>:</u>	Geotech	bladder pu	mp with d	rop tube	assembly				
b. Ac	ceptance C	riteria def	ined (see	workplan)							
	emperature	± 3%	i i		- Turbidity			- D.O.	± 10% (va	lues >0.5	mg/L)
	- pH - Sp. Cond.	± 0.1 ur	nit		- ORP		/	De-term		v. iii	den i
	- Sp. Coria.	I 376		1 S 1 - L	rawdown	< 0.3		Remove a	minimum '	i screen v	olume
c. Fie	eld Testing (Equipmen	t used:		Make		Model		Serial Nur		
					ANN 10 1-	A 4 1 1	55.6 M	22	457	<u>'7</u>	
				- 17	-77101017	(A)	200	K I V	7 1 101		II gvel
	Volume	1		Spec.	Y-11 E&	1 1 3	V	100	11	15	1
Time (24hr)	Removed (Liters)	Temp. y (°C)	<u>PHq</u>	Cond. (mS/cm)	DO (ma/l)	ORP		Flow Rate		Color	<u>/Odor</u>
1320	(Liters)	4 (C)	4-	(mo/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)		
-	15	12	5.59	- 0.91	10.2	1-2	3.13	2200	-		
1330	13	13,74	5,54	0.096	10.12	172		275	37	Clear.	
1335	1	13.95	5,44	0.095	4.04	153	1.95		-/ 02	01	
1340	1.5	14.06	5,3	0.095	2,75	145	4.5	300	36,92	Clear	
1345		14.14		0.094	2,30	139	5.51				
1350	cceptance c	141.20	5,23	0.093	2.33	134	2.07	450		THU	1 3371
H:	as required as required ave parame If no or N/	volume be turbidity b ters stabil	een remo een reac ized		Yes	No	N/A			(continued on	back)
	11110 01 147	A - Expiai	iii below.								
2 CAN		CTION					16			10	ř.
3. SAIVII	PLE COLLE	CHON:		Method:	Geotech	pladder p	ump with c	lrop tube as	sembly		
Sample!	107.01-G1)-17/9/		ner Type L vials	No. of Co	ntainers		rvation ICI	Analys	is Req. Cs	Time
				amber	2	J.T.		one		oxane	1525
_		-	(1)								- 10/0
Commer	nts	R	عهاداد	in Flow	v thru	cell a	Heck D	o, Ten	nsducor	in we	1/
		185						/			
1		Go	0	11			1.79	2 1		1- /	1
Signatur	e	len	er6	Ven	(9 00	= \$11	Date	12/18	15
									LowFlow-G\	Wa - Dec 201	15.xlsx



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1,5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G25 ft = 61.8 L / 16.3 G

Well ID:

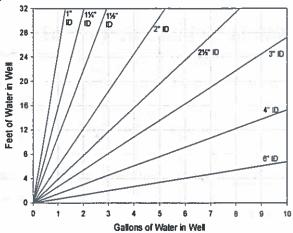
RE12001

VEILID.										
continued fo	om tront) Volume	1 1	1 11	Specific]	1	Flow	l	
Time	Removed	Temp	рН	Cond.	DO	ORP	Turbidity	Rate	Depth to	Color/Odor
(24 hr)	(Liters)	(°C)	P. 1	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
1355	3,05	1438	4,98	0.093	3.99	1346	0.68	475	37.87	Clear
1400	5	14.31	4.85	0.094	252	130.6	0.52			
1405	5.5	14.41	4.87	6.094	3.68	126.5	0.41			
1410	6,25	45	4.97	0.094	2.94	12415				Clear - bibblesin Glori
1415	7	14,48	4,84	0.044	2.67	1234	0170		,	Car
1420		14,43	4,86	0.094	2.41	1208	0.53	2,72	36.65	Class
1425	815	1447	4.86	0.044	2.07	11813	0.61	=11=		
430	10	14,42	4,85	0.094	2,44	118,7	0.53	525	36.62	Clies
1435	Ü .	14.48		0.094	2.34	1/7/2	0.7/	5.n T		Part of the second
1440	12	14,54		0.094	2.28	117.1	0.71		E U)	P. 181,
1445	1215	14,54	4,93	0095	2.06	1162	=, .	525	36.65	Clier
450	13.5	4.60	4.84	0.094	1.91	11501	6.79			
4155	1405	14,62	4.81	0.095	1576	115,3	05			
1500	KK460	4,6	4078	0.095	2.18	10513		. 15		
1505	15.5	14,52	4178	0.094	207	105.3	0199	525	36.61	Clear.
1515	16	14,43	41,86	6.694	1.31	10+113				
1526	17.5	1443	4,79	6.694	1.81	1049	01412		36.61	
							4			
1575					=				<u> </u>	Sagele
7.7.							>			
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										<u> </u>
_ = .									l .	
3 2 6	0			=		-				
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	h p	=					11.1		1	
		-								
		1								N. C.
								- 6		



Well ID:	RE	120	D	2
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a. Tot b. Wa 2. WELL a. Pur	etion: Conds: ER LEVEL Lal Well Lei Later Table I Lege Method Ceptance Comperature	DATA: (mangth	neasured	from Top c. Length d. Calcul	of Water	g) Column		(a-b)	Finish T Casing Dia 4-inch PVC	ımeter/Ma	_am/p
Neather I. WATE a. Tot b. Wa 2. WELL a. Pur	Conds: R LEVEL al Well Lea ter Table I PURGE I ge Method ceptance Comperature	DATA: (mangth	Geotech	from Top c. Length d. Calcul	of Water	g) Column		(a-b)	Casing Dia		terial
a. Tot b. Wa 2. WELL a. Pur	al Well Lei Iter Table I PURGE I ge Method ceptance C mperature	Depth DATA 5: Criteria defi	Geotech	c. Length	of Water	Column		•	_		terial
b. Wa . WELL a. Pur	ter Table I PURGE I ge Method ceptance C mperature	Depth	Geotech	d. Calcul				•	_		terial
a. Pur	PURGE I ge Method ceptance C mperature	DATA i: criteria defi	Geotech		ated Syste	m volum	e (see back)				N .
a. Pur	ge Method ceptance C mperature	l <u>:</u> Friteria defi		bladder pu			,				
	ceptance C mperature	riteria defi			ımp with d	rop tube a	assembly				
- Te	- pH Sp. Cond.	± 0.1 un	- N		- Turbidity - ORP Drawdown	± 10mV			± 10% (valu		
c. Fiel	d Testing I	Equipment	used:		Make		Model		Serial Num	ber	
				1 11		7		187			-
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	рH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/	<u>Odor</u>
0-15		17-4-1			15:13	3-7-4			36-6	Hen	
1:30	1091	15 80	5.22	0.080	5.91	45.4		200	3 (.21	Cuc	~
135	-	14.87	5.22	0.080	5.71	42.5		500	36.71	4	
140	-	14.92	5.22	0.080	5.73	47.2	1.48	500	36.71	11	
145		14.00	5.22	0.080	5.88	412.3	1.47	200	36.71	la .	
1:50		14.87	5.22	0.000	5-91	42-6	1.45	500	36.76	11	
Has Has Has	ceptance c s required s s required s ve parame If no or N/	volume be turbidity be ters stabili	en remov een reach zed		Yes	≥ □ □			(0	continued on b	ack)
SAMP	LE COLLE	CTION:		Method:	Geotech b	ladder pu	ımp with d	rop tube as:	sembly		
ample IC	12-6W-12	2915		er Type L vials	No. of Co.	ntainers	Presei H		Analysis VOC	•	Time
			1-L a	mber	2		no	ne	1,4-Dio	xane	
omment	s _				-# =n =						
gnature									Date		



Volume /	Linear Ft	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
175	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

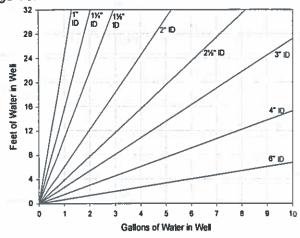
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

continued fr	Volume			Specific		,	=	Flow		· I
Time (24 hr)	Removed (Liters)	Temp (°C)	pН	Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Rate	Depth to water (ft)	Color/Odor
(2-7-111)	(citers)	(0)		(IIIO/OIII)	(mg/c/	(1114)	(1170)	(minima)	water (It)	P
	†		-		-0					
								15.0		
	115.									
. 1					= .	**		- 1		
		3		- 201					· 77	
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ES0	LUTION	

14/	Λ -	
Well ID:	RE120	D 3

Client:	Navy	NWIRP B	ethpage	E IE CESS		_ Date:	12/ 79	/ 15	Time: Star	tam/
Project		6026652	26	. IF	A. P.	_			Finish	nam/
Site Loc	cation: er Conds:	۵, ۵		r V C F	<u> </u>	- C	allector(s):	JC	ITP	
				A 6/0			mector(s).			
a. To	otal Well Le	ength	<u> </u>	d from Top c. Length	of Water	Column			Casing Di 4-inch PV	iameter/Material 'C
b. W	ater Table	Depth 3	b.9	d. Calcula	ated Syste	em Volun	ne (see back)		-14	
	L PURGE I		Gentech	n bladder pu	mo with d	iron tube	assembly			
					inp with c	nop tabe	assembly			
-Т	cceptance (emperature - pH - Sp. Cond.	± 3% i ± 0.1 ui		vore in the	- Turbidity - ORP Prawdown	± 10m			0.00	llues >0.5 mg/L)
1	1 2			-		\ U.3		remove a		
c. Fie	eld Testing	Equipmer	nt used:		Make		Model		Serial Nur	nber
- '	aci.			V = V - V		18 4	77			
Time	Volume Removed	0.000	рН	Spec.	DO	ORP		Flow Rate		Color/Odor
(24hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	70.00
1200	Doni		4.86	0.021	11.77	56.1	1.21	Sad	31.9	clear
17.05	-	14.75	41.88	0.026	4.72	98.1	1.20	500	37.14	
,,	Q.751	3.9 47	1 1155	0.00	41-12	3.40		300		
			W	71 112 1		36 H N	-	ů.	V)	
P. C.								W \$1		
Ha Ha	cceptance of as required as required ave parame If no or N	volume be turbidity b ters stabil	een remo een reac ized		Yes	No	N/A			(continued on back)
3. SAMF	PLE COLLE	ECTION:		Method:	Geotech l	oladder p	ump with d	rop tube as	sembly	
Sample I	D 13 - GW-1	27415		ner Type L vials	No. of Col	ntainers		rvation Cl	Analysi VO	•
			1-L a	amber	2		no	ne	1,4-Dic	oxane
Commen	its									
	THE ST				- 18-11					
Signature	31-17			11					Date	A STATE OF THE STA
			NCC/AT			-			THE PARTY OF THE P	(1) アクラザ (10) 24円(1) (2) (1)



			0.00
	Volume /	Linear Ft	. of Pipe
	ID (in)	Gallon	Liter
	0.25	0.0025	0.0097
	0.375	0.0057	0.0217
	0.5	0.0102	0.0386
	0.75	0.0229	0.0869
	1	0.0408	0.1544
	1.25	0.0637	0.2413
	1.5	0.0918	0.3475
į	2	0.1632	0.6178
	2.5	0.2550	0.9653
	3	0.3672	1.3900
	4	0.6528	2.4711
	6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

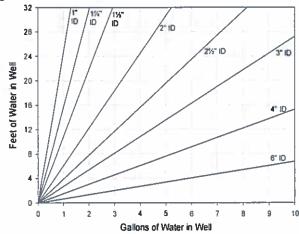
continued from	Volume	_=		Specific	DO	000	T	Flow	D45 44	0-1/0-1
Time (24 hr)	Removed (Liters)	Temp (°C)	pН	Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Rate (ml/min)	Depth to water (ft)	Color/Odor
-	22							= 4	**	
		_							M. A	
				_	= =	= =				
		_						4" "		
٠,						91		2		
		=	9		*			1111+		-60
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		= =	65.	3 9		1	1 2	1 1 1 1 1 1 1 1 1	- E	
	18.	15 4 1	1)	1				- Charles 19	1011	, 154 , 155 gal
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- MANAGER HALLES OF THE THE STREET ST



Well ID:	RE	121	01	
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Client:	Navy N	WIRP Be	ethpage			Date: 1	34/2/21	/ 1 <u>5</u>	Time: Start _	₹30 am/pm
Project N	No:	6026652				-	,	19	Finish_	
Site Loc			_			-	144-1			
Weather	r Conds:						lector(s):			
1. WAT	ER LEVEL	DATA: (n	neasured	from Top	of Casing	g)				
a. To	tal Well Ler	ngth	- 8	c. Length	of Water	Column		(a-b)	Casing Diam 4-inch PVC	meter/Material
b. W	ater Table (Depth		d. Calcula	ated Syste	em Volum	e (see back)			
	L PURGE D		Geotech	bladder pu	ımp with d	lrop tube a	assembly			
h Ac	ceptance C	riteria def	ined (see	workplan)						
	emperature		Ì		- Turbidity - ORP	± 10% ± 10mV		- D.O.	± 10% (valu	ues >0.5 mg/L)
	- Sp. Cond.			- [Drawdown	< 0.3'		Remove a	minimum 1	screen volume
c. Fie	eld Testing	Equipmen	it used:		Make		Model		Serial Num	ber
									LAW BY	1 _4
Time (24hr)	Volume Removed (Liters)	Temp.	pΗ	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate	Depth to water (ft)	Color/Odor
855	(Ellers)	14.92	10.02	0.136	2.40	1651	(1410)	(1111/11111)	34.40	
900	~ ~	H.90	631	0.000	1.48	146.3	824	= "	7.10	
905		14.88	6.25	0.085	1.38	146.6	007		34,72	
910		14.41	6.00	0.075	1.30	146.0	455		31,70	
	. = =	14.97				144.3	133		35.40	
915		14.95	5.58	1.072			10.1	_	J3.7 C	
920 d. A	cceptance o		5.53 ss/fail	0.071	0.45 Yes	1509 No	10.9 N/A			continued on back)
H:	as required as required ave parame	volume b turbidity b	een remo een reaci lized							
3. SAM	PLE COLL	ECTION:		Method:	Geotech	bladder p	ump with o	drop tube a	ssembly	
Sample	ID			ner Type	No. of Co			ervation	Analysis	
		1		L vials amber	2			ICI one	1,4-Dio	
		1:		-						
Comme	nts				= 1=					
		- 11	100							
Signatur	е						A		Date	



Volume /	Linear Ft	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

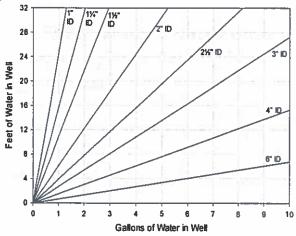
RE121 01

Well ID:		RE1	<u> </u>							
(continued fro				0 15	1	ı	,			
- .	Volume	_	l _,,	Specific			T. orbitalis.	Flow	D15 4-	ColoniOdan
Time	Removed		pН	Cond.	DO (ma/l)	ORP	Turbidity (NTU)	Rate (ml/min)	Depth to water (ft)	Color/Odor
(24 hr)	(Liters)	(°C)	4 . 4	(mS/cm)	(mg/L)	(mV)	(NTO)	(mivmin)	water (it)	<u></u>
925		14.93	5.55	0.071	0.93	151.8	THE STATE OF THE S			
130		14.95	5.52	0.071	0.84	153.6	_			
935		14.45	5.53	0.071	0.84	153.6				
940		14.99	5.51	0071	0.75	154.2	8.00		35.42	
945	1390	14.99	5.50	0.07/	0.58	154.2		53		
150	13gc	15.97	5.50	0.071	0.57	154.1	4.21		34.40	
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Well ID:	RE 121	DZ
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							*			1	
Client:		WIRP B		Sel III e		Date: <u>1</u>	21 21	<u>/ 15</u>	Time: Start		
	No:					10			Finish	1340	_am/pm
		Verly					llasta da V	ر شامیر			
vveatne	r Conds:	<u>Clou</u>	dy 47	**			nector(s):	_50			-
1. WAT	ER LEVEL	DATA: (r	neasured	from Top	of Casing	g)					
	otal Well Le	1. 7		0 9					Casing Dia 4-inch PV		aterial
b. W	ater Table I	Depth	1.07	d. Calcul	ated Syste	m Volum	e (see back)				
	L PURGE I		Geotech	bladder pu	ump with d	rop tube a	assembly				111000
	cceptance C		fined (see						1		
- T	emperature				- Turbidity		,	- D.O.	± 10% (val	ues >0.5	mg/L)
	- pri - Sp. Cond.	± 0.1 ur	וונ	7.0	- ORP Drawdown	1.0		Remove a	minimum 1	screen v	olume
	·					0.0		1101110101			
c. Fie	eld Testing	Equipmen	it used:	Hanna	Make		Model HI98703	1 10	Serial Num		
				YSI	The second	W	556 mes		54577		12 VI
T'	Volume			Spec.		000	T. 1.1.124	Elem Dete	Danish to	0-1	(Od
<u>Time</u> (24hr)	Removed (Liters)	Temp.	pΗ	Cond. (mS/cm)	DO (mg/L)	ORP (mV)	(NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	Odor
1120	(Elters)	(0)		(111070111)	(mg/L)	(IIIV)	(1410)	(1117/11117)	34.38		
1150		15.03	5.29	0.049	7.85	6.7	369	425	Z4.59	Cloudy	
1155		15:05	5.21	6.049	6.63	-1.8	357	425	34.39	.01	177
1200		15.11	5.24	0.063	\$ 29	_11.0	366	425	34.39	ħ	remi
1205		15.12	5.25	0.063	5.13	-13.2	362	450	34.40	٦	
1210	=	15-12	5.27	0.068	4.40	-22.4	106	450	34.40	_ /:	
d. Ad	cceptance c		ss/fail		Yes	No	N/A			continued on	back)
	as required				<u> </u>						
	as required ave parame			ned		- H					
П	If no or N/					. 📙 🔻	ш.				
3. SAMI	PLE COLLE	ECTION:		Method:	Geotech b	oladder pu	ump with d	rop tube as	sembly		
Sample I	D 2-GW-122			ner Type L vials	No. of Cor	ntainers		rvation Cl	Analysis		Time /ンン,
	2-GW-122			amber	2	-		me	1,4-Dic		1371
1210	C 0/10 ()		-11 14		_				171.010		
Commer	nts								V:		
						1 2					
						1000					
Signature	• ()								Date	12/21	1/200
							1		LowFlow-GV	/a - Dec 201	5.xlsx



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

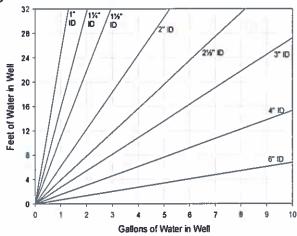
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

continued fo	om front)									
Time (24 hr)	Volume Removed (Liters)	Temp (°C)	рН	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1215	2 1	15:12	2.53	0.069	4.08	-26.z	4707	450	34.40	cloudy
1220	5701	1218	5.21	0.070	3.76	-29.4	21.0	450	34.40	14.
1226	127 史:	15.16	5.17	0.070	3.20	-77-2	13.6	450	J4.41	charin,
1230	55-17	15.16	5.17	0.070	3.16	-75:4	17.9	47-0	⊅લ, બા	21
1235	12.1536	12.55	5.15	6.071	3.03	-41.6	17.6	450	34.41	IN
1240	The state of	12.18	5.15	0.070	2.98	-43.7	₩,ч	450	J4.41	m !! (2)
1245	22	15.15	5.15	0.070	7.97	-45.9	10.9	450	34.41	fc
1280		15.15	5.16	0-071	7-71	-48-1	10.5	450	34.41	It.
1255	10 gel	15.18	2.12	0.071	2.87	-50.1	9.32	450	74.41	fr
1300	ii	12.12	2.15	0.070	2.84	-5/5	8.41	950	74.41	
1212		15.17	5.15	0.070	2.77	-579	9.24	450	74.41	Ì!
1220		15-15	5.16	0.071	277	-54.5	8.85	450	34.41	£ e
							П	- 1		· · · · · · · · · · · · · · · · · · ·
			70		==		10		= 5	
	90								50	
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					1			8 6	5 I=	
			21							
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					=	122				W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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							7			
		101								
	<u> </u>			7						



Well ID:	RE12201	_
TTONIE.	KEILUI	

Client: Project N		WIRP Be				Date: 12	21 15	/ <u>15</u>	Time: Start		am/pm am/pm
Site Loca				Condia					LIUISU	1600	_a/pin
	Conds:	Hay d	en a (Col	lector(s):		00		_
1. WAT	ER LEVEL				of Casing	g)					
	tal Well Ler							•	Casing Dia 4-inch PVC		terial
b. Wa	ater Table [Depth <u>42</u>	1.79	d. Calcula	ated Syste	m Volume	e (see back)		· · · · · · · · · · · · · · · · · · ·	3.1 22	
	L PURGE D		Geotech	bladder pu	ımp with d	rop tube a	assembly		£1.	J	
	ceptance C emperature	± 3%	·		- Turbidity			- D.O.	± 10% (val	ues >0.5 r	ng/L)
	- p∺ Sp. Cond.	± 0.1 un ± 3%	lit	- 0	ORP - ORP	± 10mV < 0.3'		Remove a	minimum 1	screen vo	olume
	· eld Testing f		t used:		Make		Model		Serial Num		
	3	G 02						100	ELLIX a		T 1/67
						0 1					
	Volume			Spec.						-	
<u>Time</u> (24hr)	Removed (Liters)	Temp. (°C)	<u>рН</u>	Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	<u>Color/</u>	Odor
133.5										Pump	on
ԾԿ <i>ወ</i>		15.bl	6.06	0°000	9,57	112-6	0.57	imo	13,70	Chas	
1344		15,20	5.63	0.077	4.91	103.1		bow	43.21	cleas.	
1350		15.12	5.63	8.678	4.51	100.7					,
1355		15.06	5.64	0.078	4.27	A.078					
1400		15.09	5.69	0-080	3.87	95.6			42.61		
d. Ad Ha Ha	cceptance of as required as required ave parame If no or N	volume be turbidity b ters stabil	een remo een reacl lized		Yes	No	N/A			(continued on	back)
3. SAMI	PLE COLLE	ECTION:		Method:	Geotech	bladder p	ump with c	lrop tube as	ssembly		- 4
Sample I	D Z ZOI -GW	-14/5/4	40-m	ner Type L vials amber	No. of Co	ontainers		ervation ICI one	Analysi VO 1,4-Di	Cs	Time 1455
			1-1.	ailibei			110	JI IE	1,4-01	UXAIIE	17 27
Commer	nts	L		4		_					
							10 T				
Signature	e								Date		



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2,4711
6	1.4688	5.5600

One screen volume (4-inch well)

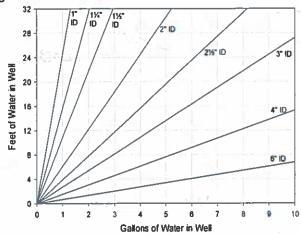
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro			j				2 3		e ^{lla} e	
_	Volume			Specific				Flow		0.1.10
Time	Removed		pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
14.05	59a)	15:02	5.71	0.079	3.73	93.3			42.48	
1410		14.93		0.079	364	92.4	3,66		45.13	-
1415		14.72	5.67	0.010	3.66	92.1			47.43	clear
1420	,	14.79	5,69	0.079	3.54	826			42.49	-
1425		14.83	5.68	0.079	3.43	89.4				
14 30		14.78	5.67	4.078	3,34	89.)	2.61		4248	
1435	18 ger	14.63	5.69	0.079	3,25	88.9	1.98		42.48	clear
1440	/	14.61	5, 71	0,079	3.04	89.5			42.45	UENT
1443		14456	5.73	0,074	2,91	89.8			42.48	yes.
450	13.25 4	14.54	5. 75	P.0.79	2.92	89.જ	1.02	600	42.48	clear
1455	SEMPLO.		4	,					_	
									-	
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Well ID:	REIZZDZ	

						-					
Client: Project N Site Loc	No: ation:		6 don X	Certis			21 /5	<u>/ 15</u>	Time: Start Finish	1600	am/pm am/pm
vveatner	Conds:		sunny	600			lector(s):				
1. WAT	ER LEVEL	DATA: (r	neasured	from Top	of Casing	g)					
	tal Well Lei							-	Casing Dia		terial
b. Wa	ater Table (Depth <u>4</u>	3.63	d. Calcula	ated Syste	m Volume	e (see back)	13.19	4		
	L PURGE (rge Method		Geotech	bladder pu	ımp with d	rop tube a	assembly				
	ceptance C emperature - pH	± 3%	fined (see		- Turbidity - ORP	± 10% ± 10mV		- D.O.	± 10% (val	ues >0.5 n	ng/L)
	Sp. Cond.	± 3%		- 0	Prawdown	-< 0.3 '		Remove a	minimum 1	screen vo	lume
c. Fie	eld Testing I	Equipmer	nt used:		Make V ST		Model ろろん		Serial Num		
					anno.	41 4	18703	I	1180211		11 12
	Volume			Cooo							
Time (24hr)	Removed (Liters)	Temp. (°C)	pН	Spec. Cond. (mS/cm)	<u>DO</u> (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/	<u>Odor</u>
1345	***	11.7			_=		=		= 1	ON	
1330			1		~			600	TE		
1335		15.46	5.37	0.090	5.82	145.2			43.02		
1340		15.39	5.31	0.072	4.47	164.9	4.15		4 -		_ 41
1345	1- 1	15.22	5.28	0.071	4.46	166.9					
1350			5.22	0,071	4.93	170.7	-	==0			
d. Ad Ha Ha	cceptance of as required as required ave parame If no or N	volume b turbidity b ters stabi	een remo een reacl lized	ved	Yes	No 	N/A	1		continued on t	pack)
3. SAMI	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with d	lrop tube as	ssembly		
Sample I	D -02-6W	1-12151	<u>40-m</u>	ner Type L vials	No. of Co	ontainers	E	rvation ICI one	Analysis VO	Cs .	Time (570)
			1				IR		1,7-510		
Commer	nts										
Signature	-	Pau	P Kan	th			4		Date	12/15/	15



Volume / Linear Ft, of Pipe									
ID (in)	Gallon	Liter							
0.25	0.0025	0.0097							
0.375	0.0057	0.0217							
0.5	0.0102	0.0386							
0.75	0.0229	0.0869							
1	0.0408	0.1544							
1.25	0.0637	0.2413							
1.5	0.0918	0.3475							
2	0.1632	0.6178							
2.5	0.2550	0.9653							
3	0.3672	1.3900							
4	0.6528	2.4711							
6	1.4688	5,5600							

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

Well ID:

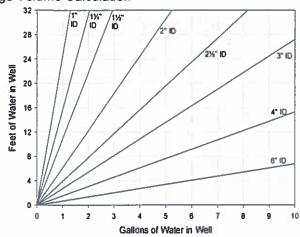
REIZZ DZ @ 1320

teastioned for		Cipo								
(continued fr	Volume		1 = 1	Specific	_		1 1	Flow	1	
Time	Removed	Temp	pН	Cond.	DO	ORP	Turbidity	Rate	Depth to	Color/Odor
(24 hr)	(Liters)	(°C)	Pit	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	301017-0431
	59a	15.32	5.21	0.071	4.93	172.9	(/	()	110.101 (10)	
1355	3901	15:17	5.21	0.071	446	174.7		880	43.03	·
			5.21		4.93	1780		000	4500	
1405		15.21		0.070	4.90		7.06			.
1410		15:21	5.21	0.071		179.5	7.06		.12 >	
1415		1502	5.22	0.070	4.91	181.9		660	43,00	
1420		14,98		0.070	4.91	184.8			-	
1425		1488	5.12	0.671	4.95	189.7			12 6	
1430	1090	14.75	5.22	0.070	499	190,6	0.85		43.00	
1435	U	14.79		0.071	5.02	193.7	0.80	600		
1440	1200	14.71	5.2	0.070	477	1962				<u>.</u>
1445	-				·					MP-10 stonged
1450	(/)	15.01	5.21	0.070	5.15	2007	0.68	600	43.00	600 again
1455	,	14.77	5.21	0.071	4.88	202.1				minntoc
1500	Back	14.85	521	0.071	4.72	203,3		_		1
1595	1	14.80	5-1	0.071	5.13	213.7			•	
1510		7.3								Sample
70 70										
							-			
						-				· · · · · · · · · · · · · · · · · · ·
	 								-	
		 								
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										<u> </u>
										. <u></u>
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Well ID: REIZZD3	
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Client: Navy NWIRP Bethpag	e	Date: <u>1</u>	21 /5 /	<u>15</u>	Time: Start		_am/pm
Project No: 60266526	J :				Finish_	1600	_am/pm
	E Curtis						
	. 60°	Co	llector(s):				_
1. WATER LEVEL DATA: (measu	red from Top of Ca	ısina)					
a. Total Well Length		-+		(a b)	Casina Dia	matar/N/a	torial
	0.0.0			•	Casing Dia		ileriai
b. Water Table Depth 43,34	d. Calculated S	System Volum	e (see back)				
2. WELL PURGE DATA							
a. Purge Method: Geote	ech bladder pump w	ith drop tube	assembly		7		
b. Acceptance Criteria defined (s	see workplan)						
- Temperature ± 3%		idity ± 10%		- D.O.	± 10% (valu	res >0.5 r	mg/L)
- pH ± 0.1 unit		DRP ± 10m\	/		(3.2.	J. =,
- Sp. Cond. ± 3%		own < 0.3'		Remove a	minimum 1	screen vo	olume
c. Field Testing Equipment used	: Make	3	Model	10 T 25	Serial Num	ber	
	YSI		56 MF	25	05H19	THE RESERVE OF THE PARTY OF THE	R
	Hanne		98705	E	00186	53	
	-						
Volume	Spec.	0.000	To colo i ditto o	Eleve Dete	Danth to	= 0-1	(O.d.,
Time Removed Temp. ph	- W 000-	n 120 Divisi 120			Depth to	Color/	Ogor
(24hr) (Liters) (°C)	(mS/cm) (mg		(NTU)	(ml/min)	water (ft)	01	1
13:40 0- 15.13 4.9	a terr		86.1	500	12.90	Cloud	///
13:45 - 14.90 4.8		60 178.F	-		~	C/0-	dy
13150 1491 4.68	7 0.021 3.5	9 176.5	2.3	b	a 1		/
1355 14,90 4,6	3 0,020 3,6	0 177.8					
1400 530 14.91 4.6	6 0.020 3,5	2 176.4					
1405 14.46 4.81					42.85		÷
d. Acceptance criteria pass/fail	Υ _ε		N/A			continued on	back)
Has required volume been re	_	<u> </u>			-		
Has required turbidity been re	eached	1 🖳					
Have parameters stabilized					77		
If no or N/A - Explain belo	w.						
=							
3. SAMPLE COLLECTION:	Method: Geot	ech bladder p	oump with di	rop tube as	sembly		
					_	_	
	• •	of Containers	Presei H	rvation	Analysis		Time
	0-mL vials -L amber	2		ne	1,4-Dic		1500
E 122 D3 - GW - 121515	-L allibei		110	ile .	1,4-010	Marie	
C							
Comments							
			11				0.005
Signature					Date		



Volume / Linear Ft. of Pipe								
ID (in)	Gallon	Liter						
0.25	0.0025	0.0097						
0.375	0.0057	0.0217						
0.5	0.0102	0.0386						
0.75	0.0229	0.0869						
1	0.0408	0.1544						
1,25	0.0637	0.2413						
1.5	0.0918	0.3475						
2	0.1632	0.6178						
2.5	0.2550	0.9653						
3	0.3672	1.3900						
4	0.6528	2.4711						
6	1.4688	5.5600						

One screen volume (4-inch well)

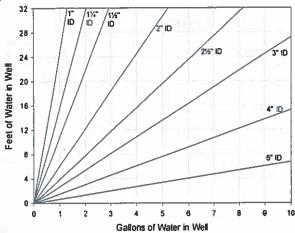
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro	om front)									
CONTINUES IT	Volume		1	Specific	-3			Flow	Î	-
Time	Removed	Temp	pH	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)	2	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
1410		14,91	4.88	0.020	3.29	1685	7.31			
1415		14.82	4.88	0.020	3,24	168.4		525	42.79	
141:20		141.80	4.82	0.000	3 24	166.6	9.23	500	42.83	Dichely Cloudy
14.25		14.80	4.71	0.020	3.18	168.4	8.46	200	_	Middle Cloudy
14:30	_	141.78	4,70	0.020	3.28	168.7	_	500	42.82	
14.35	10 Gal	11.69	4,60	ර . එට	3.33	173.6	11, 0	. •	_	
14:45	'	14.70	4,64	0.020	3,30	177.6		525	12.81	
14:50		14.66	4.63	0.020	3.39	179.6	6.81		13. B	= 13 /11 = =
141:55				0.020	3.34	120,3	12.4		42.84	
15:00	13,5	14,60	4.67	0.020	3.32	180,4	141.3	500	42.22	Take Reading
		_		`	,					
										11:1
								,		
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Well ID:	RE123	PI	
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00.1100	41711414						•				
Client: Project I Site Loc	No:	NWIRP Be 6026652		Lol	II	Date: <u>1</u>	212/	/ 15	Time: Start Finish	730	_am/pm _am/pm
Weather	Conds:		ny 400			Col	lector(s):				_ 1
a. To	ER LEVEL	DATA: (r ک ngth	neasured	from Top c. Length	of Water	Column		•	Casing Dia 4-inch PVC		terial
			1.65	d. Calcula	ated Syste	m Volum	e (see back)				
	L PURGE I		Geotech	bladder pu	mp with d	rop tube a	assembly				
- Te	ceptance C emperature - pH - Sp. Cond.	± 3% ± 0.1 ur			- Turbidity - ORP Drawdown	± 10mV			± 10% (valu		
			ıt vondı			. 0.0	Madel	remove a			Julie
G. FIE	eld Testing	Equipmen	it usea:		Make		Model		Serial Num	ber	
					II W	1 1	19	L II Ist	Vaca		
<u>Time</u> (24hr)	Volume Removed (Liters)	<u>Temp.</u> (°C)	<u>pH</u>	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/	Odor
930	_		_							ON	
840		5.08	6.64	0.087	21.35	89.2		550	47.58		
845	,	15.70	5.91	0.087	11.32	102.1	15.4	550	47.54	cleur	
850		15.29	5.67	0.087	10.27	110.4				_	
900	Seal	15.38	5.58	0.087	10.24	113.3	=		=		= =
905		15.45	5.41	0.087	9.94	121.7		700	-		
Ha Ha	cceptance of as required as required ave parame	volume b turbidity b ters stabi	een remo een reacl lized		Yes I I I I I I	No	N/A		(continued on	back)
B. SAMF	PLE COLLE	ECTION:		Method:	Geotech I	bladder pu	ump with d	rop tube as	sembly		
Sample I RE12	D 3 01 -GW	-122115	′ 40-m	ner Type L vials amber	No. of Co 3	ntainers	×ı H	rvation Cl	Analysis VOO 1,4-Dio	Os	Time
			1-1-	artibel			- 110	one	1,4-010	AGI IC	
Commen	its _		<u> </u>						= 3		
			111								
Signature	•								Date		



Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.468 <u>8</u>	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

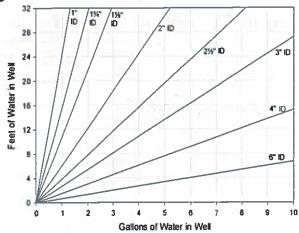
Well ID: R < 123 D1 a 8:30

(continued from	om front)	. 124 D		<u> </u>						
	Volume		Ì	Specific				Flow		
Time	Removed		pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)	- 11	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)		
910		15.43	5.35	0.087	9.67	128.1	4.45		47.63	
915	logal	15151	5.3/	0,087	<i>9.53</i>	135.0	4.413	700		
920		15.54	5.29	0.087	9.51	150.1		=	47.64	
925		15.56	5.30	0.087	4.50	153.3			7/4	
930	41.5 ac 1	1556	5.27	0.087	9.47	1627	3,08	700	47.63	
935	13ggl	15.60	5,27	0.087	9.38	169.6	VII			
940	13.59.1	15:59	5.25	0.087	4.32	172.8				
	1185					_			Į_	0.6
		, 1	1) .		100	à	11		
				3.0						
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					-			7.76		



Well ID: R612302

CONSU	LTANTS	LOW	1044	- Clouin	u vvat		-		OII IXEC		- 12
Client:		WIRP Be				Date: 12	2121	<u>/ 15</u>	Time: Start		_am/pm
Project N Site Loca		6026652				-			Finish	1030	_am/pm
Weather			RK CE			- Col	lector(s):	8.14	25		
			enry 4	_			100101(3).	<u> </u>			
a. To	ER LEVEL tal Well Lei	ngth 6	60	c. Length	of Water	Column		-	Casing Dia		aterial
b. Wa	ater Table เ	Depth	8.90	d. Calcula	ated Syste	em Volume	e (see back)				
	L PURGE (Irge Method		Geotech	bladder pu	ımp with d	lrop tube a	assembly				
- Te	ceptance Cemperature - pH - Sp. Cond.	± 3% ± 0.1 un			- Turbidity - ORP Drawdown	± 10mV		- D.O. Remove a	± 10% (val		шТ
c. Fie	eld Testing	Equipmen	t used:	<u> </u>	Make S <u>[</u> MWA		Model 55る		Serial Num 56199		1 00 0 1 00 0
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	рН	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Colo	r/Odor
820		on = .	104	18	135	1		550		OH	
830		1381	5.93	0,030	6,00	162.1	87,714	550	48.98	CLYAR	/M on
635		13.87	5.77	0.025		167.8	8 1 47,	4	2 15 W	3 .0	111111
840		13.82	5.69	0.024	7.32	170.7	4		,T	PIST	he open
845		13.97		0,022	826	179.2	4.22	550	48.98	11	"
95D	56n	1382	5.54	0.022	2.31	183.8					
d. Ad Ha Ha	cceptance of as required as required ave parame If no or N	volume be turbidity b	een remo een reacl ized		Yes	No 	N/A			(continued o	n back)
3. SAMI	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with c	irop tube as	sembly	Ш	6
Sample	123 DZ-	GW-1221	1 40-m		No. of Co			ervation	Analysi VO	Cs	Time
		n	1-L 3	amber	2		П	one	1,4-Di	uxane	751
Commer	nts	<u>II</u>							<u>_lu</u> 8_1		<u> </u>
Signatur	e			= =					Date		



		2-0
Volume /	Linear Ft.	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

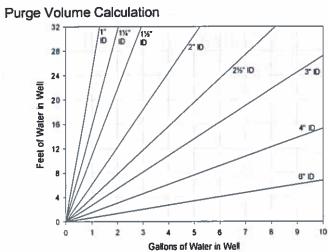
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

continued fro	om front)			-20					_	
Time	Volume Removed		рН	Specific Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	. (mV)	(NTU)	(ml/min)	water (ft)	
955			5,55	0.022	8.29	186.0		550	48.99	
900			5.55	0.022	8.34	1887	55 3 7			
9.05		14.12	5.54	0.027	B136	191.2	7.52			CLARIN ODER
9:10		400			8.41	193.8				
9:15		1421	5,54	0.022	8.39	195.4		\$11	48.98	CESM / NO ODEN
9:20	10 GM	1423	5.54	0.072	9,35	197.9	5.31			•
9:25		14.25	5.54	0.022	8.33	198.6		550		
930	100	1430	5.54	0.022	838	200.3	476		48.99	CLLM / NO UDM
9:35		14.32		D.022	838	201.7	4.68	1.4.2	-	
9:40	13.5	14.35	554	0.022	9.37	2029	4.52		=x	1. 50
Q ₁				- 67					R	
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Ш		11/-39			1. 2		-		+ -	EU.
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33.7	 								= ,	*
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(a)		-					,			
V										
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Well ID:	RE12303	

Client: Navy NWIRP Bethpage Project No: 60266526 Site Location: LIRK Lob						Date: <u>1</u> 2	21221	/ 15	Time: Start Finish		_am/pm _am/pm
Weather			Sil Hug		ı E	Col	lector(s):				_
a. To b. Wa 2. WELI	ER LEVEL tal Well Ler ater Table [L PURGE [rge Method	DATA: (name of the control of the co	neasured 340 46,74	from Top c. Length	of Water	g) Column em Volume	3 (see back)	(a-b)	Casing Dia 4-inch PVC		aterial
b. Ac	ceptance C emperature	riteria del ± 3% ± 0.1 ur		workplan) -	Turbidity	± 10% ± 10mV			± 10% (val		
c. Fie	ld Testing E	Equipmen	nt used:		Make		Model		Serial Num	ber	
<u>Time</u> (24hr)	Volume Removed (Liters)	Temp.	<u>рН</u>	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color	/Odor
8,76		0:59	7-33	0-087	11.47	97.1	100 m	550	48.74	llean	
8:25		14.30	5-85	0.029	2-64	39-1	45.45	550	41.95	munk	7.
8738		14-33	4.48	0.028	1.44	6-4	_	1			
3:22		14.37	4.90	0.629	1-23	-4.2					
8:40		14.38	501	0.635	1.26	-9-1		_	48.95		
		14.43		0.069	1.19	-24.3		600			
Ha Ha	ceptance c as required as required ave parame If no or N/	volume b turbidity b ters stabil	een remov een reach lized		Yes	No	N/A			continued or	back)
3. SAMF	LE COLLE	CTION:		Method:	Geotech	bladder pu	ump with d	lrop tube as	sembly	=	
Sample II REI230	D 3-6W-122	115	40-m	ner Type L vials amber	No. of Co 3 2	ntainers	<u> </u>	rvation ICI one	Analysi: VO	Cs	Time
Commen	ts	Jo	mple	المداء	- 9:	45	=======================================	8 <u> </u>			10
Signature	=		- II					'	Date		



	_		
Vo	lume /	Linear Ft	. of Pipe
11	D (in)	Gallon	Liter
	0.25	0.0025	0.0097
	0.375	0.0057	0.0217
	0.5	0.0102	0.0386
	0.75	0.0229	0.0869
	1	0.0408	0.1544
	1.25	0.0637	0.2413
	1.5	0.0918	0.3475
1	2	0.1632	0.6178
	2.5	0.2550	0.9653
	3	0.3672	1.3900
	4	0.6528	2.4711
	6	1.4688	5.5600

One screen volume (4-inch well)

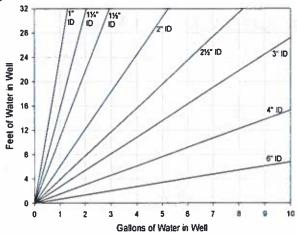
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued fro	- ft\					-				
(conunued inc	Volume			Specific	ı î		ľ Í	Flow	i i	
Time	Removed	Temp	pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	1 (1) 141
8:50		14.59	5.85	0.07)	0-97	- 44.3				Clear
8.55		14-63	5-87	0.073	0.92	-47.1			40:45	Uear
9.00		14-65	5-86	0.070	0.83	-56.5	<u> </u>			Clean
9:05	1	14.55	5-84	0-068	0.81	-629	7.71			
9:10	logal	13.76		0-006	0-77	-706			_	t .
9-15		14.69	5.42	0-065	0.7)	-74.9		600		Oleca
9:20	,	14.87	5-77	0-064	0.71	-77.5	7.40			
9:25		14.74		0-062	0.08	- 80.0				
9:30	4	14.77	5.72	0066	0.66	- 82-8	9.25			
ELLE					_					
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Well ID:	TTIOID

							•				
Client:	Navy I	WIRP B	ethpage			Date: 12	21 17	/ 1 <u>5</u>	Time: Start	1045	am/pm
Project N	lo:	6026652	6			_			Finish		am/pm
Site Loca			erson			_					_
Weather	Conds:	Opr	exast, a	mizule	500	Coll	lector(s):				
1. WATE	ER LEVEL	DATA: (r	neasured	from Top	of Casin	g)			_	_	
		Ť		c. Length				(a-b)	Casing Dia	meter/Mai	erial
						·		-	4-inch PVC	- Av	.c.i icii
b. Wa	ater Table I	Depth <u>3</u>	3.85	d. Calcula	ated Syste	em Volume	(see back)				
2. WELI	. PURGE I	DATA						,			
	rge Method		Geotech	bladder pu	ımp with c	lrop tube a	ssembly				
h Ac	ceptance C	ritoria del	ined /see	workplan)		=					
	emperature		11100 (300		- Turbidity	± 10%		- D.O.	± 10% (val	ues >0.5 m	ng/L)
	- pH	± 0.1 ur	nit		- ORP	± 10mV					11
-	Sp. Cond.	± 3%		- 0	Drawdown	< 0.3'		Remove a	minimum 1	screen vo	lume
c. Fie	ld Testing	Equipmer	it used:		Make		Model		Serial Num	ber –	
	E					10 4	-11	St. 11			
						-					<u> </u>
	Volume			Spec.	- 1						
Time	Removed	Temp.	pΗ	Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Color/0	Odor
(24hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)		
0:50		15:39	4.50	0-081	.73	266 4	14.	850			
10:55		15.36	4.67	0.078	066	939.10		850	34.05		
11:00		_		0.078		236.9		20		V.	
11:05		CONTRACTOR OF STREET		0. 678			E L	70-0	34.00		
11:10		F.7-42-4 (1997)		0.078		031.5	=1)	\$20	33.48		
11:15	4					230.7		875		Atribac	,
d. Ac	ceptance o	criteria pa	ss/fail	0.078	Yes	No	N/A	870		Starte Continued on to	365 79
Ha	s required	volume b	een remov		3				<u> </u>		
	s required			ned =							
на	ive parame	ters stabl /A - Expla					- Ш-				
	., ., .										
						5 J. C		1			
3. SAMP	LE COLLI	ECTION:		Method:	Geotech	bladder pu	ımp with d	lrop tube as	sembly		
Sample I	D		Contair	ner Type	No. of Co	ontainers	Prese	rvation	Analysis	s Rea.	Time
TT 10	10-6W-	121715	40-m	L vials	3			ICI	VO	Cs	1145
0	9 :	10 11		mber	2		n	one	1,4-Dic		
	LICATA	EU-61	1) - <u>24</u> / /	3	5				VOCs, 1,4	- Diates	1155
Commen	ts		Uplica	te.	_						
3.5			/					_			
	1										
Signature)								Date		



Volume /	Linear Ft,	of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

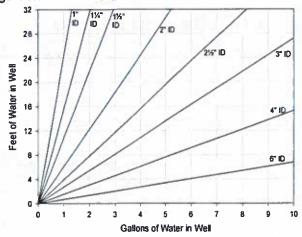
15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

TTCII ID.										
(continued fro										
	Volume			Specific				Flow		
Time	Removed		pН	Cond.	DO		Turbidity	Rate	Depth to	
(24 hr)	(Liters)	(°C)		(mS/cm)			(NTU)		water (ft)	
11:20	,	15.0	4.65	0.078	0.51	225.4	86.	ें दर्ज		Cless
11:25		15.28	4.65	0.078	0.50	2252				
11:30	10 Gal			0.078				850	3~1.00	Cler
11:35	7			0.078						
11:40		1527	4 13	0.078	0.47	224.2	08	ठेड		-
11:45	1250	15 20	11/12	0.078	A 417	2250	10		3401	Clen
7. /	Sa		7	1:215	<u>U. 77</u>	29.7.	, .		<u> </u>	
	100	plic	0.60	11:5		Tul-	100	130		
	1	pool	MPC	11.5	,					
	11		5 /					1/7	. /	1250
	1/04	e: (·	Mouti	no avo	unC	Casin	9 Sul	251Cler)		1 2.5ft
		r	rom	dend.	more	San	lo had		128	Sand
					,	-				
										<u></u>
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					- 20,000					
- L X							N _{1.000}		4	DE HOLL C
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	PF.									
					1 11				u _{t level}	<u> </u>
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1 10101	Well ID:	TT10101	
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Client:		WIRP B				_ Date: <u>1</u> 2	21 17	<u>/ 15</u>	Time: Start	_	am/pm
Project N		6026652				-			Finish	1330	_am/pm
Site Loca			erspu								
Weather	Conds:	- Onev	cast ov	izde, s	70°	_ Col	lector(s):				-
1. WAT	ER LEVEL	DATA: (n	neasured	from Top	of Casin	g)			-		
	tal Well Le			V 15				•	Casing Dia 4-inch PVC		terial
b. Wa	ater Table (Depth 🍑	. 00	d. Calcula	ated Syste	em Volume	e (see back)	/3./_			
	L PURGE (rge Method		Geotech	bladder pu	ımp with c	lrop tube a	assembly	destica	ited		
h Ac	ceptance C	citeria del	fined (see	worknian)							
	emperature		·		- Turbidity - ORP	± 10% ± 10mV		- D.O.	± 10% (val	ues >0.5 n	ng/L)
	Sp. Cond.		III.	- 0	Drawdown			Remove a	ı minimum 1	screen vo	lume
c. Fie	eld Testing	Equipmen	nt used:		Make	3.4	Model		Serial Num	iber	
				8 4	er Nu		14	y 1 1=	- 30	District the same of the same	No. No.
	Volume			Spec.			_				31X Y
Time	Removed	Temp.	рН	Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Color/e	Odor
(24hr)	(Liters)	(°C)	<u> 110</u>	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	Q-	<u> </u>
12:00	_		5.10	0.081		239.4	(1110)	850	1	Please	
12:05		15.36	509	2000	0.61	239.3		850			V. X
12:10			5.08		12 streets and the	239.3			,	250 3.811	
12:15			00 x (70 mm)	0.00	0.92	238.1		850	2		
12:20	5 Gal	15.09	5.0	0.083	0.93	238.0					
10:25		15 30	5,03	0.080	0.91	037.4		050	35.21	Cler	AND S
	ceptance o				Yes	No	N/A			(continued on t	oack)
	as required					H					
	as required ave parame			160		H	H				
110		/A - Expla									
3. SAMF	PLE COLLI	ECTION:		Method:	Geotech	bladder p	ump with o	drop tube a	ssembly		
									¥7		
Sample ا		17 14		ner Type L vials	No. of Co			ervation HCI	Analysi VO		Time
17 10	101-6W-	174 115		amber	3 2			one	1,4-Die		1300
			12,	2111001	102			0110	1,4 01	<u> </u>	
Commen	nts							HE CO			
_			, II				П				
Cit-									Data		
Signature	=								_Date		



Volume / Linear Ft. of Pipe								
ID (in)	Gallon	Liter						
0.25	0.0025	0.0097						
0.375	0.0057	0.0217						
0.5	0.0102	0.0386						
0.75	0.0229	0.0869						
1	0.0408	0.1544						
1.25	0.0637	0.2413						
1.5	0.0918	0.3475						
2	0.1632	0.6178						
2.5	0.2550	0.9653						
3	0.3672	1.3900						
4	0.6528	2.4711						
6	1.4688	5.5600						

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

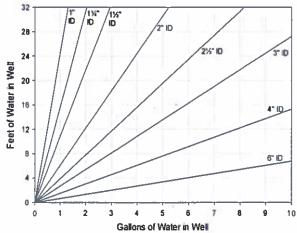
Well ID:										
continued fro										
	Volume			Specific			200	Flow		
	Removed		pН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)_	T.	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
B:30		15.28	502	0.070	0.92	230.9	0.41	850		Clear
12:35	_			150.0	0.90	234.2	*	<i>7</i> 50		
12:40	10Gal	15.20	5.03	650.0	0.90	274.C	0.12	750	35.00	Clea
12:45		15-23	5.00	0.082	0.88	032.1			34.98	Clean
12:50	4	15.23	55.03	0.082	.87	032.1 231.8	040	850	35.01	Cler
0:55	*	,		,						
3:00		Da	20/0	a) (10	157	-			
3:05		,					2 5	10		
13:10						1.0		-	г	
77.10			-				100			
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					164 11	530	11300		VE II	
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3003		χ							. 1	701
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	h			v						
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Well ID:	TT 10102	

LowFlow-GWa - Dec 2015.xlsx

										771	
Client: Project N		1WIRP Be 6026652				Date: <u>1</u> 2	2121	<u>/ 15</u>	Time: Start Finish	1345	am/pm am/pm
	Weather Conds: Collector(s): Paul Karchh										
1. WATI	. WATER LEVEL DATA: (measured from Top of Casing)										
	a. Total Well Length c. Length of Water Column (a-b) Casing Diameter/Material 4-inch PVC b. Water Table Depth 3538 d. Calculated System Volume (see back) 13.1										
b. Wa	ater Table (Depth <u>3</u>	528	d. Calcula	ated Syste	em Volume	e (see back)		 		
	L PURGE I		Geotech	bladder pu	mp with d	lrop tube a	assembly		-		
b. Ac	ceptance C	riteria def	ined (see	workplan)							
			•			± 10%		- D.O.	± 10% (valu	ues >0.5 r	mg/L)
_	- pH Sp. Cond.	± 3% ± 0.1 un + 3%	it	- D	ORP - rawdown	± 10mV < 0.3'		Remove a	minimum 1	screen vo	lume
	•							ricinove a			Jamo
c. Fie	eld Testing	Equipmen	t used:		Make ST		Model 556	/20	Serial Num		3/X
					ال		مادر	<u> </u>	74(16)	<u> </u>	217
											, 1 - 1,000 Mars
Time	Volume Removed	Temp.	рН	Spec. Cond.	DO	ORP	Turbidity	Flow Rate	Depth to	Color/	Odor
(24hr)	(Liters)	(°C)	<u> pr 1</u>	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	001017	<u>Oddi</u>
1355				. ==1	-	_ =	7 1	ac sil a		OX	
1400		15.42	5.61	0.033	4.10	3526	0.62	100	35.38	,	
1485	_ 3	15 36	5.54	0.033	3.3%	145.7			1		_,,2-,,,
1410	·=	1534	5,41	0.033	404	142.9			35.38		-
1415		15,34	5,31	0.034	4.44	142.4	0.00	700	4 .		
1420	56AL	15 32		D-U34	5.14	146.0		700	35.38		-
Ha Ha	cceptance of the comment of the comm	volume be turbidity b	een remo een reacl ized		Yes	No	N/A			continued on	back)
3. SAMF	PLE COLLI	ECTION:	- (Method:	Geotech	bladder p	ump with c	Irop tube as	sembly		
Sample I	D 10102-6	iW-1221	13 40-m	L vials	No. of Co			ervation ICI	Analysis VO	Cs	Time /5//)
OceA	110 150		1-L:	amber	2		no	one	1,4-Dic		/ 🖘
	LICATE		1-1	<u></u>	./			П			600
Commer	its	1.10	policate	- Soul	112						
						-					
Signature	9 /	Doul	Klee	1		_ 1_			Date _	14/21	15



Volume / Linear Ft. of Pipe								
ID (in)	Gallon	Liter						
0.25	0.0025	0.0097						
0.375	0.0057	0.0217						
0.5	0.0102	0.0386						
0.75	0.0229	0.0869						
1	0.0408	0.1544						
1.25	0.0637	0.2413						
1.5	0.0918	0.3475						
2	0.1632	0.6178						
2.5	0.2550	0.9653						
3	0.3672	1.3900						
4	0.6528	2.4711						
6	1.4688	5,5600						

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G 20 ft = 49.4 L / 13.1 G 25 ft = 61.8 L / 16.3 G

(continued from	om front)									
	Volume			Specific				Flow		
Time	Removed		рН	Cond.	DO	ORP	Turbidity		Depth to	Color/Odor
(24 hr)	(Liters)	(°C)		(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	water (ft)	
14.25			5,21	0.034	6.06	150.5		700		
14.30	. 1	1531	517	0.134	6.55	153.3	3-	200	3538	
1435		15.30	3.19	0.034	6.88	154.4	0.00		35.38	
1440		1529		0.034	7-12	1500				
1445	10 GM			0.034	7.21	148.3	000	700	35.38	
1456			5113	11.034	730	154.5			35.38	
1455	13 an	1525		- 10	- 12	. /				
1500	100		5.09	0.034	7.41.	157.4				
							Si .		7	[90]
15/0										Sanole-
1660										
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										13/11
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									<i>b.</i>	<u> </u>
				,						

Appendix B

Analytical Data Validation – Resolution Consultants



DATA VALIDATION REPORT

Project:	Regional Groundwater Investigation — NWIRP Bethpage						
Laboratory:	Katahdin Analytical						
Sample Delivery Group:	BETHPAGE-3						
Analyses/Method:	Volatile Organic Compounds by U.S. EPA SW-846 Method 8260C 1,4-Dioxane by U.S. EPA SW-846 Method 8270D via Selective Ion Monitoring (SIM)						
Validation Level:	3						
Project Number:	0888812477.SA.DV						
Prepared by:	Dana Miller/Resolution Consultants Completed on: 02/5/2016						
Reviewed by:	Tina Clemmey/Resolution Consultants File Name: BETHPAGE 3_8260C_8270D						

SUMMARY

This report summarizes data review findings for samples listed below, collected by Resolution Consultants from the Regional Groundwater Investigation — NWIRP Bethpage Site on 14 to 29 December 2015 in accordance with the following Sampling and Analysis Plans:

- Sampling and Analysis Plan, Bethpage, New York. (Resolution Consultants, April 2013).
- UFP SAP Addendum, Installation of Vertical Profile Borings and Monitoring Wells, Operable Unit 2, NWIRP Bethpage, New York. (Resolution Consultants, November 2013).
- UFP SAP Addendum, Inclusion of Additional Target Analytes for Volatile Organics Analyses, NWIRP Bethpage OU2, Bethpage, New York. (Resolution Consultants, August 2014).

Sample ID	Matrix/Sample Type	Analysis
FIELD1-FB-121615	Field Blank	8260C/8270D_SIM
RE103D1-GW-121415	Groundwater	8260C/8270D_SIM
RE103D2-GW-121415	Groundwater	8260C/8270D_SIM
RE103D3-GW-121415	Groundwater	8260C/8270D_SIM
RE104D1-GW-121515	Groundwater	8260C/8270D_SIM
RE104D2-GW-121515	Groundwater	8260C/8270D_SIM
DUPLICATE1-GW-121515	Field Duplicate of RE104D2-GW-121515	8260C/8270D_SIM
RE104D3-GW-121515	Groundwater	8260C/8270D_SIM
RE105D1-GW-121715	Groundwater	8260C/8270D_SIM
RE105D2-GW-121715	Groundwater	8260C/8270D_SIM
RE107D1-GW-121815	Groundwater	8260C/8270D_SIM



Sample ID	Matrix/Sample Type	Analysis
RE107D2-GW-121815	Groundwater	8260C/8270D_SIM
RE107D3-GW-122915	Groundwater	8260C/8270D_SIM
RE108D1-GW-122215	Groundwater	8260C/8270D_SIM
RE108D2-GW-122215	Groundwater	8260C/8270D_SIM
RE114D1-GW-122115	Groundwater	8260C/8270D_SIM
RE114D2-GW-121615	Groundwater	8260C/8270D_SIM
RE114D3-GW-121615	Groundwater	8260C/8270D_SIM
RE120D1-GW-121815	Groundwater	8260C/8270D_SIM
RE120D2-GW-122915	Groundwater	8260C/8270D_SIM
RE120D3-GW-122915	Groundwater	8260C/8270D_SIM
RE121D1-GW-122115	Groundwater	8260C/8270D_SIM
RE121D2-GW-122115	Groundwater	8260C/8270D_SIM
RE122D1-GW-121515	Groundwater	8260C/8270D_SIM
RE122D2-GW-121515	Groundwater	8260C/8270D_SIM
RE122D3-GW-121515	Groundwater	8260C/8270D_SIM
RE123D1-GW-122115	Groundwater	8260C/8270D_SIM
RE123D2-GW-122115	Groundwater	8260C/8270D_SIM
RE123D3-GW-122115	Groundwater	8260C/8270D_SIM
TRIP BLANK 121415	Trip Blank	8260C
TRIP BLANK 121615	Trip Blank	8260C
TRIP BLANK-121815	Trip Blank	8260C
TRIP BLANK-122915	Trip Blank	8260C
TT101D1-GW-121715	Groundwater	8260C/8270D_SIM
TT101D2-GW-122115	Groundwater	8260C/8270D_SIM
DUPLICATE-GW-122115	Field Duplicate of TT101D2-GW-122115	8260C/8270D_SIM
TT101D-GW-121715	Groundwater	8260C/8270D_SIM

Data validation activities were conducted using the following guidance documents: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, specifically Method 8260C, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (United States Environmental Protection Agency [U.S. EPA] 2006), *SW-846 Method 8270D, Semivolatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (U.S. EPA 2007), *U.S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (U.S. EPA, June 2008), and *Department of Defense Quality Systems Manual for Environmental Laboratories*, Version 4.2 (October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements, and/or professional judgment were used as appropriate.



REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

- ✓ Data completeness (chain-of-custody)/sample integrity
- ✓ Holding times and sample preservation
- ✓ Gas chromatography/Mass spectrometer performance checks
- Initial calibration verification (ICV)/continuing calibration verification (CCV)
- ✓ Laboratory blanks/trip blanks/field blanks
- **X** Surrogate spike recoveries
- X Matrix spike and/or matrix spike duplicate results
- ✓ Laboratory control sample/laboratory control sample duplicate results
- X Field duplicates
- ✓ Internal standards
- ✓ Sample results/reporting issues

The symbol (\checkmark) indicates that no validation qualifiers were applied based on this parameter. Acceptable data parameters for which all criteria were met and no qualification was performed and non-conformance or other issues that were noted during validation, but did not result in qualification of data are not discussed further. The symbol (\checkmark) indicates that a QC non-conformance resulted in the qualification of data. Any QC non-conformance that resulted in the qualification of data is discussed below.

RESULTS

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- The initial calibration percent relative standard deviation, correlation coefficient/coefficient of determination, and/or response factor method acceptance criteria were met
- The ICV standard percent recovery acceptance criteria were met
- The CCV method percent difference or percent drift and response factor acceptance criteria were met
- The retention time method acceptance criteria were met



Data qualification to the analytes associated with the specific initial calibration (ICAL) was as follows:

ICAL Linearity Non-conformance:

Cuitouio	Actions					
Criteria	Detected Results	Non-detected Results				
%RSD >15% and quantitation based on mean response factor	J	υJ				

Notes:

%RSD = Relative standard deviation

J = Estimated

UJ = Undetected and estimated

Data qualification to the analytes associated with the specific ICV was as follows:

ICV Recovery Non-conformance:

Critorio	Actions				
Criteria	Detected Results	Non-detected Results			
Recovery >120%	J	UJ			
Recovery < 80%	J	UJ			

Notes:

J = Estimated

UJ = Undetected and estimated

Data qualification to the analytes associated with the specific CCV was as follows:

CCV Linearity Non-conformance:

Criteria	Actions				
Criteria	Detected Results	Non-detected Results			
%Difference or %Drift > 20%	J	UJ			

Notes:

= Estimated

UJ = Undetected and estimated

ICAL, ICV and CCV non-conformances are summarized in Attachment A in Tables A-1, A-2, and A-3.

Surrogate Spike Recoveries

Surrogates provide information needed to assess the accuracy of analyses. Known amounts of surrogate compounds, or compounds which are not likely to be found in the actual samples, are added to each organic sample to check for accuracy. If surrogate percent recoveries (%Rs) are close



to the known concentrations, the reported target compound concentrations are assumed to be accurate. Data qualification on the basis of surrogate recovery was as follows:

Surrogate Recovery Non-conformance Chart:

Criteria	A	ction
Criteria	Detected	Non-detected
% R > Upper Limit	J	No qualification
20% < %R < Lower Limit	J	UJ
% R < 20%	J	Rejected

Notes:

%R = Percent recovery
J = Estimated

UJ = Undetected and estimated

Surrogate recovery non-conformance is summarized in Attachment A in Table A-4.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results

MS/MSDs are generated to provide information about the effect of each sample matrix on the sample preparation and the measurement methodology. MS/MSD percent recoveries (%Rs) assess the effect of the sample matrix on the accuracy of the analytical results and %Rs above the laboratory control limit could indicate a potential high result bias while %Rs below QC limits could indicate a potential low result bias. The relative percent differences (RPDs) between the MS and MSD results are evaluated to assess sample precision. The MS/MSD %Rs and RPDs were reviewed for conformance with the QC acceptance criteria. Data qualification to the analytes associated with the specific MS/MSD non-conformances were as follows:

MS/MSD Non-conformances Chart:

Criteria	Action					
Criteria	Detected Compounds	Non-detected Compounds				
%R>Upper Limit	J	No qualification				
20% < %R < Lower Limit	J	UJ				
%R <20%	J	Rejected				

Notes:

%R = Percent recovery

RPD = Relative percent difference

J = Estimated

UJ = Undetected and estimated

MS/MSD non-conformances are summarized in Attachment A in Table A-5.



Field Duplicate

Two field duplicate pairs were collected to assess precision: RE104D2-GW-121515/ DUPLICATE1-GW-121515 and TT101D2-GW-122115/DUPLICATE-GW-122115. Field duplicate RPDs were reviewed for conformance with the Resolution Consultants QC criteria of \leq 30% for aqueous matrices and \leq 50% for solid matrices. These criteria apply if both results were greater than two times the limit of quantitation (LOQ). Data qualification to the analytes associated with the specific field duplicate RPDs was as follows:

Field Duplicate Non-conformances Chart:

Criteria	RPD	Action			
Criteria	KFD	Detected	Non-detected		
Sample and duplicate are nondetect	Not calculable (NC)	No qualification	No qualification		
Sample and duplicate regults > 2v 00	>30 (aqueous)		Not Applicable		
Sample and duplicate results ≥2x LOQ	>50 (solids)	J			
If sample or duplicate result is >2x LOQ and the other is not detected	NC	J	ΟΊ		
If sample or duplicate result is <2x LOQ and the other is not detected	NC	No qualification	No qualification		

Notes:

LOQ = Limit of quantitation

J = Estimated

UJ = Undetected and estimated

Field duplicate non-conformances are summarized in Attachment A in Table A-6.

Qualifications Actions

The data were reviewed independently from the laboratory to assess data quality. All compounds detected at concentrations less than the limit of quantitation but greater than the method detection limit were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation. Any sample that was analyzed at a dilution because of high concentrations of target or non-target analytes was checked to confirm that the results and/or sample-specific limit of quantitation and limit of detections were adjusted accordingly by the laboratory. Trichloroethene in sample RE108D2-GW-121215 result value reported above the calibration range and was qualified estimated "J" because the value was off-scale.

No results were rejected; therefore, analytical completeness was calculated to be 100 percent. Data not qualified during data review are considered usable by the project. The remaining results qualified as estimated may be high or low, but the data are usable for their intended purpose,



according to U.S. EPA and Department of Defense guidelines. Final data review qualifiers used to describe results and how they should be interpreted by the end data user are provided in Attachment B and Attachment C. Attachment D provides final results after data review.

ATTACHMENTS

Attachment A: Non-Conformance Summary Tables
Attachment B: Qualifier Codes and Explanations
Attachment C: Reason Codes and Explanations
Attachment D: Final Results after Data Review

Attachment A Non-Conformance Summary Table

	Table A-1 Initial Calibration Non-Conformance							
Method	Method Analyte %RSD Limit Associated Samples Qualifier							
8260C	CHLOROETHANE	17.80841	<15%	TI0330-1, -2, -5, -6, -11, -4, -7, -3DL, -10RA, - 12, -13, -14, -17, -4DL, -6DL, and 7DL	Detects: J Non-detects: UJ			
8260C	TETRACHLOROETHENE	15.13611	<15%	TI0428-4, -1, -3RA, -1DL, -2RA, and TI0330- 17DL	Detects: J Non-detects: UJ			

Notes:

%RSD = Relative standard deviation UJ = Non-detect estimated value

J = Estimated value

	Table A-2 Initial Calibration Verification Non-Conformance								
Method	Method Analyte ICV ID %R Limit Associated Samples								
8260C	TETRACHLOROETHENE	P3840.D	150.8	80-120	TI0116-1, -2, -3, -4, -5, -6, -7, - 8, -9, -11, -10RA, -2DL, -4DL, - 9DL, -3DL, -11DL, TI0214-1, -4, -5, -6, -7, -9, -8, -10, 12, -8DL, and - 7DL	Detects: J Non-detects: UJ			
8260C	TRANS-1,3-DICHLOROPROPENE	C6396A.D	123.47	80-120	TI0330-1, -2, -5, -6, -11, -4, -7, - 3DL,-10RA, -12, -13, -14, -17, - 4DL, -6DL, and 7DL	Detects: J Non-detects: UJ			
8260C	ACETONE	P4114A.D	72.62	80-120	TI0428-3RA, -1DL, -2RA, -4, -1, and TI0330-17DL	Detects: J Non-detects: UJ			

Initial calibration verification identification

Notes:

ICV ID =

ID =

%R =

UJ =

J = Identification
Percent recovery
Non-detect estimated value
Estimated value

Table A-3 Continuing Calibration Verification Non-Conformance							
Lab ID /Calibration ID	Analyte	%D	%D Limit	Associated Samples	Qualifier		
WG176285-4 / P3940.D	BROMOMETHANE	23.79988	+/- 20	TI0116-1, -2, -3, -4, -5, -6, -7, -8, -9, and -11	Detects: J Non-detects: UJ		
WG176319-4 / P3964.D	BROMOMETHANE	24.57249	+/- 20	TI0116-10RA, TI0214-1, -4, -5, -6, -7, and -9	Detects: J Non-detects: UJ		
WG176319-4 / P3964.D	4-METHYL-2-PENTANONE	20.68251	+/- 20	TI0116-10RA, TI0214-1, -4, -5, -6, -7, and -9	Detects: J Non-detects: UJ		
WG176436-4 / P3989.D	BROMOMETHANE	28.03265	+/- 20	TI0214-8, -10, and -12	Detects: J Non-detects: UJ		
WG176436-4 / P3989.D	CHLOROETHANE	27.72207	+/- 20	TI0214-8, -10, and -12	Detects: J Non-detects: UJ		
WG176436-4 / P3989.D	4-METHYL-2-PENTANONE	21.50811	+/- 20	TI0214-8, -10, and -12	Detects: J Non-detects: UJ		
WG176832-4 / P4138.D	ACETONE	-34.27373	+/- 20	TI0428-4, and -1	Detects: J Non-detects: UJ		
WG176788-4 / C6418.D	CHLOROMETHANE	-20.54679	+/- 20	TI0330-10RA, -12, -13, -14, -17, -4DL, -6DL, -and -7DL	Detects: J Non-detects: UJ		
WG176788-4 / C6418.D	ACETONE	-27.76004	+/- 20	TI0330-10RA, -12, -13, -14, -17, -4DL, -6DL, -and -7DL	Detects: J Non-detects: UJ		
WG176788-4 / C6418.D	TETRACHLOROETHENE	-21.38037	+/- 20	TI0330-10RA, -12, -13, -14, -17, -4DL, -6DL, -and -7DL	Detects: J Non-detects: UJ		
WG176788-4 / C6418.D	METHYL ACETATE	-25.56044	+/- 20	TI0330-10RA, -12, -13, -14, -17, -4DL, -6DL, -and -7DL	Detects: J Non-detects: UJ		
WG176732-4 / C6394.D	ACETONE	57.49765	+/- 20	TI0330-1, -2, -5, -6, -11, -4, -7, and -3DL	Detects: J Non-detects: UJ		
WG176732-4 / C6394.D	2-BUTANONE	25.58556	+/- 20	TI0330-1, -2, -5, -6, -11, -4, -7, and -3DL	Detects: J Non-detects: UJ		
WG176732-4 / C6394.D	2-HEXANONE	22.15201	+/- 20	TI0330-1, -2, -5, -6, -11, -4, -7, and -3DL	Detects: J Non-detects: UJ		

Notes:

ID = Identification %D = Percent difference

UJ = Non-detect estimated value
J = Detected estimated value

	Table A-4 Surrogate Non-Conformance							
Method	Method Surrogate %R Limits Associated Sample Qualifier							
8260C	1,2-DICHLOROETHANE-D4	121	70-120	RE114D1-GW-122115	Detects: J			
8260C	DIBROMOFLUOROMETHANE	117	85-115	RE114D1-GW-122115	Detects: J			
8260C	DIBROMOFLUOROMETHANE	116	85-115	RE121D2-GW-122115	Detects: J			

Notes:

=

%R UJ Percent recovery Non-detect estimated value = J Detected estimated value

Table A-5 Matrix Spike/Matrix Spike Duplicate Non-Conformance (Micrograms per liter)

		Sample	Spike	MS	MSD	%R	
Spiked Sample	Analyte	Result	Added	%R	%R	Limits	Qualifier
TT101D2-GW-122115	METHYLENE CHLORIDE	<2.5	50.0	53.4	60.2	55-140	UJ
TT101D2-GW-122115	CIS-1,2-DICHLOROETHENE	1.7	50.0	54.6	59.8	70-125	J
TT101D2-GW-122115	1,2,4-TRICHLOROBENZENE	< 0.50	50.0	50.8	56.2	65-135	UJ
TT101D2-GW-122115	CHLOROBENZENE	< 0.50	50.0	55.8	60.2	80-120	UJ
TT101D2-GW-122115	1,1-DICHLOROETHANE	< 0.50	50.0	64.4	70.8	70-135	UJ
TT101D2-GW-122115	CIS-1,3-DICHLOROPROPENE	< 0.50	50.0	60.8	64.4	70-130	UJ
TT101D2-GW-122115	1,2-DIBROMO-3-CHLOROPROPANE	< 0.75	50.0	46.4	57	50-130	UJ
TT101D2-GW-122115	ISOPROPYLBENZENE	< 0.50	50.0	56.2	61	75-125	UJ
TT101D2-GW-122115	TRANS-1,2-DICHLOROETHENE	< 0.50	50.0	58.4	65.2	60-140	UJ
TT101D2-GW-122115	BENZENE	< 0.50	50.0	62.4	67.6	80-120	UJ
TT101D2-GW-122115	1,2-DICHLOROPROPANE	< 0.50	50.0	63.8	68.8	75-125	UJ
TT101D2-GW-122115	O-XYLENE	< 0.50	50.0	58.8	62.2	80-120	UJ
TT101D2-GW-122115	1,3-DICHLOROBENZENE	< 0.50	50.0	51.4	56.8	75-125	UJ
TT101D2-GW-122115	1,1-DICHLOROETHENE	3.6	50.0	56.8	63.4	70-130	J
TT101D2-GW-122115	1,1,2-TRICHLOROETHANE	0.50	50.0	63.4	65.4	75-125	J
TT101D2-GW-122115	CYCLOHEXANE	< 0.50	50.0	63.8	69	71-133	UJ
TT101D2-GW-122115	TOLUENE	< 0.50	50.0	65	69.6	75-120	UJ
TT101D2-GW-122115	CARBON TETRACHLORIDE	1.3	50.0	63.6	66.6	65-140	J
TT101D2-GW-122115	1,2-DICHLOROETHANE	< 0.50	50.0	61.6	66	70-130	UJ
TT101D2-GW-122115	1,2-DICHLOROETHENE, TOTAL	1.7	100	56.5	62.5	84-121	J
TT101D2-GW-122115	XYLENES, TOTAL	<1.5	150	59.8	63.2	89-116	UJ
TT101D2-GW-122115	STYRENE	< 0.50	50.0	60.4	63.4	65-135	UJ
TT101D2-GW-122115	DIBROMOCHLOROMETHANE	< 0.50	50.0	59.4	63.6	60-135	UJ
TT101D2-GW-122115	1,4-DICHLOROBENZENE	< 0.50	50.0	50.8	54.6	75-125	UJ
TT101D2-GW-122115	ETHYLBENZENE	< 0.50	50.0	56.2	60.8	75-125	UJ
TT101D2-GW-122115	M- AND P-XYLENE	<1.0	100	60.2	63.8	75-130	UJ
TT101D2-GW-122115	BROMOFORM	< 0.50	50.0	55.6	57	70-130	UJ
TT101D2-GW-122115	BROMODICHLOROMETHANE	< 0.50	50.0	67.6	70	75-120	UJ
TT101D2-GW-122115	CHLOROFORM	0.90	50.0	57	62.4	65-135	J
TT101D2-GW-122115	1,1,1-TRICHLOROETHANE	0.34	50.0	58.9	64.3	65-130	J
TT101D2-GW-122115	1,2-DIBROMOETHANE	< 0.50	50.0	61.2	66.6	80-120	UJ
TT101D2-GW-122115	1,1,2,2-TETRACHLOROETHANE	< 0.50	50.0	51.6	59.2	65-130	UJ
TT101D2-GW-122115	1,2-DICHLOROBENZENE	< 0.50	50.0	52	57.6	70-120	UJ

Notes:

MS = Matrix spike MSD = Matrix spike duplicate %R = Percent recovery

%R = Percent recovery

Bold = Percent recovery not within control limit

UJ = Nondetect analyte in associated sample qualified estimated "UJ" because the %R is lower than the control limit.

J Detected analyte in associated sample qualified estimated "J" because %R is lower than the control limit.

		Table A-6 Field Duplicate (Micrograms per liter)				
			Sample	Duplicate		
Sample ID	Duplicate ID	Analyte	Result	Result	RPD	Qualifiers
TT101D2-GW-122115	DUPLICATE-GW-122115	1,1-DICHLOROETHENE	3.6	5	32.6	J - both results

Notes: RPD J Relative percent difference Estimated value =

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual quantitation limit necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Attachment C Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
bm	Missing blank information
bt	Trip blank contamination
С	Calibration issue
cr	Chromatographic resolution
d	Reporting limit raised due to chromatographic interference
dt	Dissolved result > total over limit
е	Ether interference
ej	Above calibration range; result estimated.
f	Presumed contamination from FB or ER.
fd	Field duplicate RPDs
h	Holding times
hs	Headspace greater than 6mm in all sample vials
i	Internal standard areas
ii	Injection internal standard area or retention time exceedance
it	Instrument tune
k	Estimated maximum possible concentrations (EMPC)
	LCS recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
mc	Deviation from the method
md	MS/MSD RPDs
nb	Negative laboratory blank contamination
р	Chemical preservation issue
p-h	Uncertainty near detection limit (< Reporting Limit), historical reason code applied.
pe	Post Extraction Spike
q	Quantitation issue
r	Dual column RPD
rt	SIM ions not within + 2 seconds
S	Surrogate recovery
sp	Sample preparation issue
su	Evidence of ion suppression
t	Temperature Preservation Issue
X	Low % solids
У	Serial dilution results
Z	ICS results

Attachment D
Final Results after Data Review

		Sample	e Delivery Group Lab ID Sample ID Sample Date	TRIP B	THPAGE- F10116-1 BLANK 12 ² 2/14/2015	
			Sample Type		rip Blank	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	1
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C		79-34-3	UG L	0.5	U	<u> </u>
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	, ,					
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	Ū	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG_L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	1
8260C	CIS-1.2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
	,					1
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	<u> </u>
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	<u> </u>
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	1
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG_L	0.33	J	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ū	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	Ü	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	Ü	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
270D_SIM	1,4-DIOXANE	123-91-1	UG L	1.0		

		Sample	e Delivery Group Lab ID Sample ID	TI0116-10RA		
			Sample Date Sample Type	12	2/15/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ū	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ū	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ū	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ū	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	Ū	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ū	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ū	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ū	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ū	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	U	Ť
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG L	2.5	_ <u> </u>	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-03-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.17	Ü	

		Sample	Delivery Group Lab ID Sample ID	TI0116-11 RE122D2-GW-1215		
			Sample Date Sample Type		2/15/2015 oundwater	
Mathad	Analysis	CAS No	Units			RC
Method 8260C	Analyte 1,1,1-TRICHLOROETHANE	71-55-6	UG L	Result	Qual U	RC
8260C			UG L	0.5 0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE 1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	79-34-5 76-13-1	UG L	21	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	3.1		
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	1.5		
8260C	1.1-DICHLOROETHANE	75-34-3 75-35-4	UG L	8.9		
	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C 8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.5	U	
8260C						
8260C 8260C	1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE	106-93-4 95-50-1	UG_L UG L	0.5 0.5	U	
			UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2			U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	5.7	11	-
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	-
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	U	
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	1.9		
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	U	
8260C	CHLOROFORM	67-66-3	UG_L	2.6		
8260C	CHLOROMETHANE	74-87-3	UG_L	11	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	5.7		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	2.3	J	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	4700		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	11		

		Sample	e Delivery Group Lab ID Sample ID	BETHPAGE-3 TI0116-2 RE103D3-GW-12141		
			Sample Date Sample Type	12	2/14/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	2.5		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.62	J	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	J
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.24	J	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.79	J	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	1		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C 8260C	TRICHLOROETHENE	79-01-6	UG_L	510	U	
8260C 8260C	TRICHLOROETHENE TRICHLOROFLUOROMETHANE	79-01-6 75-69-4	UG_L		U	
8260C 8260C				<u>1</u> 1	U	
8260C 8260C	VINYL CHLORIDE	75-01-4 1330-20-7	UG_L		U	
02000	XYLENES, TOTAL 1,4-DIOXANE	1330-20-7	UG_L UG L	1.5 0.81	U	

		Sample	e Delivery Group Lab ID Sample ID	BETHPAGE-3 TI0116-3 RE103D1-GW-12141:		
			Sample Date Sample Type		2/14/2015 oundwater	r
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	12		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.62	J	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	1.1		
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	7.6		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	3.2		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ū	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ū	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ū	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	Ť
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	3.2		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	3	J	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	Ť
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG_L	930		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-03-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	-
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	1.3		1

		Sample	e Delivery Group Lab ID Sample ID	BETHPAGE-3 TI0116-4 RE103D2-GW-1214		
			Sample Date Sample Type	12	2/14/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	3.2		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.77	J	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ū	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1.1	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	74-63-9 75-15-0	UG L	0.5	U	C
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	1.1	- 0	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
	ETHYLBENZENE			-	U	
8260C	ISOPROPYLBENZENE	100-41-4 98-82-8	UG_L	0.5	U	
8260C			UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1 0.75		
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	108-87-2	UG_L	0.5	U	
8260C	menne tent botteet	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.72	J	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	620		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	1.2		L

		Sample	Delivery Group Lab ID		ΓΗΡΑGE-3 10116-5	3
			Sample ID Sample Date Sample Type	12	01-GW-12 2/15/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	4.6		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.8	J	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1.1	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ū	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ū	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ū	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ū	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	1.1	_	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.68	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	1.9	J	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	-
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1.3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG L	110		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	6.9	— -	

		Sample	Delivery Group Lab ID		ГНРАGE-3 10116-6	3
			Sample ID Sample Date Sample Type	12	02-GW-12 2/15/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.7		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	2.7		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	-
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1.3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG L	6.8		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.22	J	

		Sample	Delivery Group Lab ID	BETHPAGE-3 TI0116-7		
			Sample ID Sample Date Sample Type	12	03-GW-12 2/15/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ū	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ū	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ū	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	74-63-9 75-15-0	UG L	0.5	U	C
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
					U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	0.5	_	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1		
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.17	U	

		Sample	Delivery Group Lab ID		ΓΗΡΑGE-3 10116-8	3
			Sample ID Sample Date Sample Type	DUPLICA 12		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	110
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	Ü	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.75	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.7	0	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
			UG_L		U	
8260C	1,4-DICHLOROBENZENE	106-46-7		0.5	_	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	U	
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	U	
8260C	CHLOROFORM	67-66-3	UG_L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG_L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	2.7		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	6.8		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-09-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	Ü	
8270D_SIM	1.4-DIOXANE	123-91-1	UG_L	0.28	J	
0210D_311VI	I,T-DIO/MINE	140-91-1	L UG_L	0.20		

		Sample	Delivery Group Lab ID			
			Sample ID Sample Date Sample Type	12	01-GW-12 2/15/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	4.7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.63	J	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1.9	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	1.9		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	1.5	J	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	600		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	8.7		

		Sample	Delivery Group Lab ID	TI0214-1			
			Sample ID Sample Date Sample Type	12	BLANK 121 2/16/2015 rip Blank	615	
Method	Analyte	CAS No	Units	Result	Qual	RC	
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U		
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U		
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U		
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U		
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.5	U		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U		
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U		
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U		
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U		
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U		
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1	U		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U		
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U		
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U		
8260C	2-BUTANONE	78-93-3	UG L	2.5	U		
8260C	2-HEXANONE	591-78-6	UG L	2.5	U		
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С	
8260C	ACETONE	67-64-1	UG L	2.5	U		
8260C	BENZENE	71-43-2	UG L	0.5	Ū		
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū		
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü		
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U		
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü		
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü		
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü		
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü		
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	Ü		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü		
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü		
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü		
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü		
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü		
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü		
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü		
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü		
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	Ü		
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	U		
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U		
8260C	O-XYLENE	95-47-6	UG L	0.5	U		
8260C	STYRENE	100-42-5	UG L	0.5	U		
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С	
8260C	TOLUENE	108-88-3	UG L	0.37	J	U	
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG_L	0.5	U		
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U		
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U		
8260C	VINYL CHLORIDE	75-09-4	UG L	1	U		
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U		
02000	1,4-DIOXANE	123-91-1	UG L	NA	J		

		Sample	BETHPAGE-3 TI0214-10 TT101D1-GW-121715 12/17/2015 Groundwater			
Method	Analyte	CAS No	Sample Type Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	1.0
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	79-34-3	UG L	16	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.48	J	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.46	U	
			UG L	4.6	U	
8260C	1,1-DICHLOROETHENE	75-35-4				
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1.9	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG_L	2.5	U	
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	1.9		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	1		_
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	1.9		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1.8	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	-
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	-
		127-18-4			UJ	_
8260C	TETRACHLOROETHENE TOLUENE		UG_L	0.5		С
8260C		108-88-3	UG_L	0.5	U	<u> </u>
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	1
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	200	 ,.	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
270D_SIM	1,4-DIOXANE	123-91-1	UG_L	11		

		Sample	e Delivery Group Lab ID			
			Sample ID Sample Date Sample Type	12	1-FB-1216 2/16/2015 eld Blank	615
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1.4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.2	J	-
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	•
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	0.5	Ü	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	U	
8260C 8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C 8260C	O-XYLENE O-XYLENE	75-09-2 95-47-6	UG_L	0.5	U	
8260C 8260C	STYRENE	95-47-6 100-42-5	UG_L UG L		U	
8260C 8260C	TETRACHLOROETHENE		UG_L UG L	0.5	UJ	
		127-18-4		0.5		С
8260C	TOLUENE TRANS 1.2 DICHI OPOETHENE	108-88-3	UG_L	0.5	U	
8260C 8260C	TRANS-1,2-DICHLOROETHENE TRANS-1.3-DICHLOROPROPENE	156-60-5	UG_L	0.5	U	
8260C 8260C	- ,	10061-02-6	UG_L	0.5		
	TRICHLOROETHENE	79-01-6	UG_L	0.36	J	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	11	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.17		

		Sample	E Delivery Group Lab ID Sample ID Sample Date	TI0214-4 RE114D3-GW-121615		
			Sample Type		oundwate	r
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	, KC
8260C			UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE 1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	79-34-5 76-13-1	UG L	13	U	
8260C 8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE	76-13-1 79-00-5	UG L	0.5	U	
	1.1-DICHLOROETHANE				U	
8260C 8260C	1,1-DICHLOROETHANE 1.1-DICHLOROETHENE	75-34-3 75-35-4	UG_L UG L	0.5	U	
	,			1.1		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	0.67	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG_L	2.5	U	
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	U	
8260C	CHLOROFORM	67-66-3	UG_L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG_L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	0.67	J	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	43		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	2.1		

		Sample	e Delivery Group Lab ID Sample ID	TI0214-5		
			Sample Date Sample Type		2/16/2015 oundwate	r
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	14		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	0.82	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ū	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ū	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ū	
8260C	CHLOROFORM	67-66-3	UG L	0.4	J	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.82	J	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG_L	70	_ <u> </u>	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	2.5		1

		Sample	e Delivery Group Lab ID Sample ID	TI0214-6		
			Sample Date Sample Type	12	2/17/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	8.7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	1.3		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1.7	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	İ .
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ū	İ
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ū	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	İ
8260C	CHLOROFORM	67-66-3	UG L	0.38	J	İ .
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	1.7		İ .
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.58	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ū	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	1
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	1
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ū	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	<u> </u>
8260C	STYRENE	100-42-5	UG L	0.5	Ü	†
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	U	Ť
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	†
8260C	TRICHLOROETHENE	79-01-6	UG_L	120		†
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	1.0		

		Sample	Delivery Group Lab ID Sample ID	TI0214-7 RE105D2-GW-121715		
			Sample Date Sample Type		2/17/2015 oundwater	•
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	1.0
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	26		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	1.3		
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	1.9		
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	7		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ū	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ū	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.5	U	Ŭ
8260C	BENZENE	71-43-2	UG L	0.5	Ü	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	3		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	2		
8260C	CHLOROMETHANE	74-87-3	UG L		U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.45	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	1.9	J	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	Ť
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1.3-DICHLOROPROPENE	10061-02-6	UG L	0.5	Ü	
8260C	TRICHLOROETHENE	79-01-6	UG L	1800		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-03-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	5.8		

		Sample	Delivery Group Lab ID Sample ID	Tl0214-8 TT101D2-GW-122115		
			Sample Date Sample Type		2/17/2015 oundwate	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.34	J	m
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	UJ	m
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	19		1
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	J	m
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	UJ	m
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	3.6	J	m,fd
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	UJ	m
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	UJ	m
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	UJ	m
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	UJ	m
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	UJ	m
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1.7	J	m
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	UJ	m
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	UJ	m
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	UJ	m
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
8260C	ACETONE	67-64-1	UG L	2.5	Ü	
8260C	BENZENE	71-43-2	UG L	0.5	UJ	m
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	UJ	m
8260C	BROMOFORM	75-25-2	UG L	0.5	UJ	m
8260C	BROMOMETHANE	74-83-9	UG L	1	UJ	С
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	<u> </u>
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	1.3	J	m
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	UJ	m
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	C
8260C	CHLOROFORM	67-66-3	UG L	0.9	J	m
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	1.7	J	m
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	UJ	m
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	m
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	UJ	m
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	1
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	UJ	m
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	UJ	m
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	UJ	m
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	- '''
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	UJ	m
8260C	O-XYLENE	95-47-6	UG L	0.5	UJ	m
8260C	STYRENE	100-42-5	UG L	0.5	UJ	m
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	UJ	m
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	UJ	m
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	_ '''
8260C	TRICHLOROETHENE	79-01-6	UG_L	510		+
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	+
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	UJ	m
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	1.7	- 00	 '''

8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	Analyte 1,1,1-TRICHLOROETHANE 1,1,2,2-TETRACHLOROETHANE 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHANE 1,2-TRICHLOROETHENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE 1,3-DICHLOROBENZENE	CAS No 71-55-6 79-34-5 76-13-1 79-00-5 75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	Sample ID Sample Date Sample Type Units UG_L	12	D-GW-121 7/17/2015 bundwater Qual U U U U U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1,1-TRICHLOROETHANE 1,1,2,2-TETRACHLOROETHANE 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	71-55-6 79-34-5 76-13-1 79-00-5 75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L UG_L	0.5 0.5 16 0.5 0.84 3.4 0.5 0.75 0.75	U U U J U U	RC
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1,2,2-TETRACHLOROETHANE 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	79-34-5 76-13-1 79-00-5 75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L UG_L	0.5 16 0.5 0.84 3.4 0.5 0.75 0.5	U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE 1,1,2-TRICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	76-13-1 79-00-5 75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L UG_L	16 0.5 0.84 3.4 0.5 0.75 0.5		
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1,2-TRICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	79-00-5 75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L UG_L	0.5 0.84 3.4 0.5 0.75 0.5	J U U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1-DICHLOROETHANE 1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	75-34-3 75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L UG_L	0.84 3.4 0.5 0.75 0.5 0.5	J U U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,1-DICHLOROETHENE 1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	75-35-4 120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L UG_L UG_L	3.4 0.5 0.75 0.5 0.5	U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,2,4-TRICHLOROBENZENE 1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	120-82-1 96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L UG_L	0.5 0.75 0.5 0.5	U	
8260C 8260C 8260C 8260C 8260C 8260C 8260C	1,2-DIBROMO-3-CHLOROPROPANE 1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	96-12-8 106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L UG_L	0.75 0.5 0.5	U	
8260C 8260C 8260C 8260C 8260C 8260C	1,2-DIBROMOETHANE 1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	106-93-4 95-50-1 107-06-2 540-59-0	UG_L UG_L UG_L	0.5 0.5	Ü	
8260C 8260C 8260C 8260C 8260C	1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	95-50-1 107-06-2 540-59-0	UG_L UG_L	0.5		
8260C 8260C 8260C 8260C	1,2-DICHLOROETHANE 1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	107-06-2 540-59-0	UG_L		U	
8260C 8260C 8260C	1,2-DICHLOROETHENE, TOTAL 1,2-DICHLOROPROPANE	540-59-0		0.5	, ,	
8260C 8260C	1,2-DICHLOROPROPANE				U	
8260C		70.07.5	UG L	3.1		
	1,3-DICHLOROBENZENE	78-87-5	UG L	0.5	U	
		541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
	2-BUTANONE	78-93-3	UG L	2.5	Ü	
	2-HEXANONE	591-78-6	UG L	2.5	Ü	
	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	UJ	С
	ACETONE	67-64-1	UG L	2.5	Ü	Ť
	BENZENE	71-43-2	UG L	0.5	Ü	
	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
	BROMOFORM	75-25-2	UG L	0.5	Ü	
	BROMOMETHANE	74-83-9	UG L	1	UJ	С
	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	Ů
	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.55	J	
	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	3.1		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
	DICHLORODIFLUOROMETHANE	75-71-8	UG L	2.2		
	ETHYLBENZENE ETHYLBENZENE	100-41-4	UG L	0.5	U	
	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
	METHYL ACETATE	79-20-9	UG L	0.75	U	
	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	U	
8260C	METHYL CICLOHEXANE METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
	STYRENE STYRENE	100-42-5	UG L	0.5	U	
	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	_
	TOLUENE		UG L	0.5	U	С
	TRANS-1.2-DICHLOROETHENE	108-88-3			U	
	- ,	156-60-5	UG_L	0.5	U	
	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	74	11	
	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
	XYLENES, TOTAL 1,4-DIOXANE	1330-20-7 123-91-1	UG_L UG L	1.5 8.4	U	

		Sample	e Delivery Group Lab ID Sample ID	TI0330-1 TRIP BLANK-121815		
			Sample Date Sample Type		2/18/2015 rip Blank	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	1.0
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	0.5	Ü	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü	
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü	
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	0.5	Ü	
8260C	1.2.4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	-
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	<u> </u>
8260C	2-BUTANONE	78-93-3	UG L	2.5	UJ	С
8260C	2-HEXANONE	591-78-6	UG L	2.5	UJ	C
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	L C
8260C	ACETONE ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	L C
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-27-4	UG L	0.5	U	
8260C	BROMOMETHANE	75-25-2	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	С
8260C	CHLOROMETHANE	74-87-3	UG L	0.5	J	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.45	U	
	,		UG L		U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5 0.5	U	
8260C	CYCLOHEXANE DIBROMOCHLOROMETHANE	110-82-7				
8260C	DICHLORODIFLUOROMETHANE	124-48-1	UG_L UG L	0.5	U	
8260C	ETHYLBENZENE	75-71-8		1 0.5		
8260C		100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1 0.75	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	1
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	-
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	U	
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	-
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
270D_SIM	1,4-DIOXANE	123-91-1	UG_L	NA		

		Sample	e Delivery Group Lab ID Sample ID	BETHPAGE-3 TI0330-10RA RE107D1-GW-121815		
			Sample Date Sample Type	12	2/18/2015 oundwate	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.95	J	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	0.21	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ū	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ū	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ū	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ū	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ū	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	С
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.21	J	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ū	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ū	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	UJ	С
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	Ť
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	<u> </u>
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	<u> </u>
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	<u> </u>
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	1.6	J	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ŭ	Ť
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	<u> </u>
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	17		Ť
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L		Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	6.9		1

		Sample	Sample Delivery Group Lab ID Sample ID Sample Date Sample Type			3 21815 r
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	79-34-3 76-13-1	UG L	15	0	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü	-
8260C	1,1-DICHLOROETHANE 1,1-DICHLOROETHENE	75-34-3 75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
			UG L		U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8		0.75	_	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	ļ
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	-
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	ļ
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	2.7		ļ
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	UJ	С
8260C	2-HEXANONE	591-78-6	UG_L	2.5	UJ	С
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	1
8260C	BROMOFORM	75-25-2	UG L	0.5	Ū	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	1
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	1
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.7		1
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	-
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	-
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	-
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	-
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	+
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	+
8260C 8260C		108-38-3/106-42	UG_L	0.5 1	U	
	M- AND P-XYLENE				U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75		
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	ļ
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	_
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	<u> </u>
8260C	STYRENE	100-42-5	UG_L	0.5	U	<u> </u>
8260C	TETRACHLOROETHENE	127-18-4	UG_L	6.4		<u> </u>
8260C	TOLUENE	108-88-3	UG_L	0.5	U	1
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	ļ
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	140		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
270D SIM	1,4-DIOXANE	123-91-1	UG L	9.3	I '	

		Sample	e Delivery Group Lab ID Sample ID Sample Date	BETHPAGE-3 TI0330-12 RE123D3-GW-122115 12/21/2015		
			Sample Type	Gro	oundwate	•
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü	
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	0.5	Ü	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMO-3-CHEOKOP KOPAINE 1,2-DIBROMOETHANE	106-93-4	UG L	0.75	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE 1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
					U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	1	_	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	-
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.56	J	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG_L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	С
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ū	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	UJ	С
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	Ŭ
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	1
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1.2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	UJ	_
8260C 8260C	TRICHLOROETHENE TRICHLOROETHENE	79-01-6	UG L	0.5	U	С
		79-01-6 75-69-4	UG_L		U	<u> </u>
8260C	TRICHLOROFLUOROMETHANE			<u>1</u> 1	U	<u> </u>
8260C	VINYL CHLORIDE	75-01-4	UG_L		_	1
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.17	U	

		Sample	e Delivery Group Lab ID Sample ID	BETHPAGE-3 TI0330-13 RE123D1-GW-122115		
			Sample Date Sample Type		2/21/2015 oundwate	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	1.0
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	0.5	Ü	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü	
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	0.5	Ü	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	C
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-27-4	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROBENZENE CHLOROETHANE	75-00-3	UG L	1	UJ	_
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	С
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	С
	,		UG L		U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE DIBROMOCHLOROMETHANE	110-82-7		0.5		
8260C		124-48-1	UG_L UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8		1 0.5		
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	UJ	С
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	6.1		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	5		L

		Sample	Delivery Group Lab ID Sample ID	T RE123[BETHPAGE-3 TI0330-14 RE123D2-GW-122115		
			Sample Date		2/21/2015		
Method	Anglyta	CAS No	Sample Type Units		oundwatei Qual	r RC	
8260C	Analyte 1,1,1-TRICHLOROETHANE	71-55-6	UG L	Result 0.5	U	RC	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü		
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	79-34-3	UG L	0.5	Ü		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	Ü		
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	0.5	Ü		
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	0.5	Ü		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü		
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü		
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.75	Ü		
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü		
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü		
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü		
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	1	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	1	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü		
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü		
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü		
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С	
8260C	BENZENE	71-43-2	UG L	0.5	U	- ŭ	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü		
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü		
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü		
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü		
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü		
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U		
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	С	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	1	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	1	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	1	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	1	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü		
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü		
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü		
8260C	METHYL ACETATE	79-20-9	UG L	0.75	UJ	С	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	Ť	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü		
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü		
8260C	O-XYLENE	95-47-6	UG_L	0.5	Ū		
8260C	STYRENE	100-42-5	UG_L	0.5	Ū		
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.59	J	С	
8260C	TOLUENE	108-88-3	UG_L	0.5	Ü		
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü		
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	UJ	С	
8260C	TRICHLOROETHENE	79-01-6	UG_L	1.5	İ		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U		
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	Ū		
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	Ü		
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.7			

		Sample	oup BETHPAGE-3 b ID Tl0330-17 e ID RE120D1-GW-121818 Date 12/18/2015 Groundwater			
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	- 110
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	42	-	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	1.4		
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	3.2		
8260C	1,1-DICHLOROETHENE	75-34-3 75-35-4	UG L	23		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.5	U	
					U	
8260C	1,2-DIBROMOETHANE	106-93-4 95-50-1	UG_L	0.5		
8260C	1,2-DICHLOROBENZENE		UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.79	J	
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG_L	0.99	J	
8260C	CHLOROMETHANE	74-87-3	UG_L	1	UJ	С
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.38	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	UJ	С
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	<u> </u>
8260C	STYRENE	100-42-5	UG L	0.5	Ü	<u> </u>
8260C	TETRACHLOROETHENE	127-18-4	UG L	2.1	J	С
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	Ť
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG L	1300	- 55	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	0.39	J	
8260C	VINYL CHLORIDE	75-09-4 75-01-4	UG L	1	U	
	VIIVIE OFFICIALE					
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	

		Sample	E Delivery Group Lab ID Sample ID Sample Date	T RE108I	BETHPAGE-3 TI0330-2 08D1-GW-122215 12/22/2015		
			Sample Type		oundwate	r	
Mathad	Analysis	CAS No	Units			RC	
Method 8260C	Analyte	71-55-6	UG L	Result	Qual	RU	
	1,1,1-TRICHLOROETHANE			0.5	U		
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U		
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	1.4			
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U		
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U		
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	0.44	J		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U		
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U		
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U		
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U		
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U		
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	0.61	J		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U		
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U		
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U		
8260C	2-BUTANONE	78-93-3	UG_L	2.5	UJ	С	
8260C	2-HEXANONE	591-78-6	UG_L	2.5	UJ	С	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U		
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С	
8260C	BENZENE	71-43-2	UG L	0.5	U		
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U		
8260C	BROMOFORM	75-25-2	UG L	0.5	Ū		
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü		
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü		
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü		
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U		
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü		
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.61	J		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü		
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü		
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü		
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü		
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü		
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü		
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü		
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü		
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	Ü		
8260C	METHYL CYCLONEXANE METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	1	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	1	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	-	
8260C	STYRENE	100-42-5	UG L	0.5	U	-	
8260C 8260C	TETRACHLOROETHENE		UG_L	1.2	_ U	-	
8260C 8260C	TOLUENE	127-18-4	UG L	0.5	U	-	
		108-88-3				-	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U		
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С	
8260C	TRICHLOROETHENE	79-01-6	UG_L	110	<u> </u>	-	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	-	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U		
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U		
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	6.7			

		Sample	Delivery Group Lab ID		BETHPAGE-3 TI0330-3DL		
			Sample ID Sample Date Sample Type	12	02-GW-12 2/22/2015 oundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC	
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	1.4	J		
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	2.5	Ü		
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	6.2			
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	2.5	U		
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	5.1			
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	9			
8260C	1.2.4-TRICHLOROBENZENE	120-82-1	UG L	2.5	U		
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	3.8	U		
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	2.5	Ü		
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	2.5	Ü		
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	2.5	Ü		
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	9	J		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	2.5	Ü		
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	2.5	Ü		
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	2.5	Ü		
8260C	2-BUTANONE	78-93-3	UG L	12	UJ	С	
8260C	2-HEXANONE	591-78-6	UG L	12	UJ	C	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	12	U	U	
8260C	ACETONE	67-64-1	UG L	12	UJ	С	
8260C	BENZENE	71-43-2	UG L	2.5	U	C	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	2.5	U		
8260C	BROMOFORM	75-25-2	UG L	2.5	Ü		
8260C	BROMOMETHANE	74-83-9	UG L	5	U		
8260C	CARBON DISULFIDE	74-63-9 75-15-0	UG L	2.5	U		
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	1.8	J		
8260C	CHLOROBENZENE	108-90-7	UG L	2.5	U		
8260C	CHLOROETHANE	75-00-3	UG L	5	UJ	С	
8260C	CHLOROFORM	67-66-3	UG L	4.4	J	C	
8260C	CHLOROMETHANE	74-87-3	UG L	5	IJ		
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	9	U		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	2.5	U		
8260C	CYCLOHEXANE	110-82-7	UG L	2.5	U		
	DIBROMOCHLOROMETHANE						
8260C 8260C	DICHLORODIFLUOROMETHANE	124-48-1 75-71-8	UG_L UG L	2.5 5	U		
					U		
8260C 8260C	ETHYLBENZENE ISOPROPYLBENZENE	100-41-4 98-82-8	UG_L UG L	2.5 2.5	U		
8260C 8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	<u>2.5</u> 5	U		
8260C 8260C	METHYL ACETATE	79-20-9	UG L	3.8	U		
					U		
8260C 8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	108-87-2 1634-04-4	UG_L UG L	2.5	U		
0-000	METHOD TEXT DOTTE TO THE			2.5	_		
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	12	U		
8260C 8260C	O-XYLENE CTYPENE	95-47-6	UG_L	2.5			
	STYRENE	100-42-5	UG_L	2.5	U		
8260C	TETRACHLOROETHENE	127-18-4	UG_L	2.5	U		
8260C	TOLUENE TRANS 4 2 DICHI OPOETHENE	108-88-3	UG_L	2.5	U		
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	2.5	U		
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	2.5	UJ	C	
8260C	TRICHLOROETHENE	79-01-6	UG_L	2900	J	ej	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	5	U		
8260C	VINYL CHLORIDE	75-01-4	UG_L	5	U		
8260C	XYLENES, TOTAL	1330-20-7	UG_L	7.5	U		
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	8.8	l		

		Sample	E Delivery Group Lab ID Sample ID Sample Date Sample Type	BETHPAGE-3 TI0330-4 RE114D1-GW-122115 12/21/2015 Groundwater		
Method	Analyto	CAS No	Units	Result	Qual	RC
8260C	Analyte 1,1,1-TRICHLOROETHANE	71-55-6	UG L			1
				0.64	J U	S
8260C 8260C	1,1,2,2-TETRACHLOROETHANE 1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	79-34-5 76-13-1	UG_L UG L	0.5 20		
8260C 8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	79-00-5	UG L	1.6	J	S
	1.1-DICHLOROETHANE				J	S
8260C 8260C	1.1-DICHLOROETHANE	75-34-3 75-35-4	UG_L UG L	1.5	J	S
	,			4	J	S
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG_L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG_L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG_L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG_L	5.1	J	S
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG_L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG_L	2.5	UJ	С
8260C	2-HEXANONE	591-78-6	UG_L	2.5	UJ	С
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U	
8260C	ACETONE	67-64-1	UG_L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG_L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	2.5	J	S
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG_L	2.9	J	S
8260C	CHLOROMETHANE	74-87-3	UG_L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	5.1	J	S
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	J	S
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	U	
8260C	TOLUENE	108-88-3	UG_L	0.3	J	S
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	370		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	5.5		<u> </u>

	Sample Delivery Group Lab ID Sample ID Sample Date Sample Type				BETHPAGE-3 TI0330-5 RE121D1-GW-122115 12/21/2015 Groundwater		
		0.00					
Method	Analyte	CAS No	Units	Result	Qual	RC	
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.38	J		
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U		
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	8.3			
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U		
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U		
8260C	1,1-DICHLOROETHENE	75-35-4	UG_L	2.1			
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U		
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	U		
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U		
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U		
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.38	J		
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	0.96	J		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü		
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü		
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü		
8260C	2-BUTANONE	78-93-3	UG L	2.5	UJ	С	
8260C		591-78-6			UJ		
	2-HEXANONE		UG_L	2.5		С	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG_L	2.5	U		
8260C	ACETONE	67-64-1	UG_L	2.5	UJ	С	
8260C	BENZENE	71-43-2	UG_L	0.5	U		
8260C	BROMODICHLOROMETHANE	75-27-4	UG_L	0.5	U		
8260C	BROMOFORM	75-25-2	UG_L	0.5	U		
8260C	BROMOMETHANE	74-83-9	UG_L	1	U		
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U		
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.34	J		
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U		
8260C	CHLOROETHANE	75-00-3	UG_L	1	UJ	С	
8260C	CHLOROFORM	67-66-3	UG L	0.47	J		
8260C	CHLOROMETHANE	74-87-3	UG L	1	U		
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.96	J		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü		
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü		
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü		
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	2.2			
8260C	ETHYLBENZENE ETHYLBENZENE	100-41-4	UG L	0.5	U		
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü		
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü		
				-	U		
8260C	METHYL ACETATE	79-20-9	UG_L	0.75			
8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	108-87-2	UG_L	0.5	U		
8260C	menne rent børne en re	1634-04-4	UG_L	0.5	U		
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U		
8260C	O-XYLENE	95-47-6	UG_L	0.5	U		
8260C	STYRENE	100-42-5	UG_L	0.5	U		
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	U		
8260C	TOLUENE	108-88-3	UG_L	0.5	U		
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U		
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С	
8260C	TRICHLOROETHENE	79-01-6	UG_L	29			
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U		
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U		
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ū		
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	6.8		1	

		Sample	e Delivery Group Lab ID		THPAGE- FI0330-6	3
			Sample ID Sample Date Sample Type	12	02-GW-12 2/21/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.48	J	S
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	17	J	S
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.64	J	s
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.51	J	S
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	3.1	J	S
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.1	J	S
8260C	1,2-DICHLOROPROPANE	78-87-5	UG_L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG_L	0.5	Ū	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	UJ	С
8260C	2-HEXANONE	591-78-6	UG_L	2.5	UJ	С
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ū	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	3.1	J	s
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	1.7	J	S
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	2.1	J	S
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.85	J	s
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	Ü	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	Ü	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	Ü	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	Ü	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	Ü	
8260C	O-XYLENE	95-47-6	UG L	0.5	Ü	
8260C	STYRENE	100-42-5	UG L	0.5	Ü	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	Ü	
8260C	TOLUENE	108-88-3	UG L	0.5	Ü	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	Ü	
8260C	TRANS-1.3-DICHLOROPROPENE	10061-02-6	UG L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG L	480		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L		Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	4.9		1

		Sample	Delivery Group Lab ID		THPAGE-7	3
			Sample ID Sample Date Sample Type	12	ATE-GW-1 2/21/2015 d Duplicat	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ū	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	24		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.65	J	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.81	J	
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	5	J	fd
8260C	1.2.4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ü	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG_L	0.75	Ū	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1.4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	UJ	С
8260C	2-HEXANONE	591-78-6	UG_L	2.5	UJ	С
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	1.4	<u> </u>	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	UJ	С
8260C	CHLOROFORM	67-66-3	UG L	0.92	J	
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	2		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C 8260C	ISOPROPYLBENZENE	98-82-8	UG_L UG L	0.5	U	
8260C 8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	0.5 1	U	
8260C 8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
					U	
8260C 8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	108-87-2 1634-04-4	UG_L UG L	0.5	U	
	merrie rent por reent			0.5	_	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE CTYPENE	95-47-6	UG_L	0.5	Ū	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.94	J	
8260C	TOLUENE TRANS 4.2 DICHI OPOETHENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	UJ	С
8260C	TRICHLOROETHENE	79-01-6	UG_L	590		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	2.2		

		Sample Delivery Group Lab ID Sample ID			THPAGE- 10428-1 02-GW-12	
			Sample Date Sample Type		2/29/2015 oundwater	•
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ū	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	25		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.64	J	
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	1.1		
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	5.7		
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	3.4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	-
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	C
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG_L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG_L	11	U	
8260C	CARBON DISULFIDE	75-15-0	UG_L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG_L	0.69	J	
8260C	CHLOROBENZENE	108-90-7	UG_L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG_L	11	U	
8260C	CHLOROFORM	67-66-3	UG_L	0.77	J	
8260C	CHLOROMETHANE	74-87-3	UG_L	11	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	3.4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG_L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG_L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG_L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG_L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG_L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG_L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG_L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	3.7	J	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	680		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	0.26	J	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	Ü	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	Ü	
3270D_SIM	1,4-DIOXANE	123-91-1	UG L	8.8		

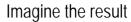
		Sample	Delivery Group Lab ID Sample ID	TI(RE120[THPAGE- 0428-2RA 03-GW-12	
			Sample Date Sample Type		2/29/2015 oundwate	•
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	Ü	
8260C	1.1.2-TRICHLORO-1.2.2-TRIFLUOROETHANE	76-13-1	UG L	3.1		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1.1-DICHLOROETHANE	75-34-3	UG L	0.5	Ū	
8260C	1.1-DICHLOROETHENE	75-35-4	UG L	0.5	Ū	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	Ū	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	Ü	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	1
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	C
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	U	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	Ü	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
	ISOPROPYLBENZENE	98-82-8			U	
8260C			UG_L	0.5	_	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG_L	1 0.75	U	
8260C	METHYL ACETATE	79-20-9	UG_L	0.75	U	
8260C	METHYL CYCLOHEXANE METHYL TERT-BUTYL ETHER	108-87-2	UG_L	0.5	U	
8260C	menne tent botteet	1634-04-4	UG_L	0.5	_	ļ
8260C	METHYLENE CHLORIDE	75-09-2	UG_L	2.5	U	
8260C	O-XYLENE	95-47-6	UG_L	0.5	U	
8260C	STYRENE	100-42-5	UG_L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	С
8260C	TOLUENE	108-88-3	UG_L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG_L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	29	ļ.,.	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
3270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.28		

		Sample	Delivery Group Lab ID	BETHPAGE-3 TI0428-3RA		
			Sample ID Sample Date Sample Type	12	03-GW-12 2/29/2015 oundwater	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	4.9		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	Ü	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	Ü	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	Ü	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	Ü	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ü	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ü	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	Ü	•
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	Ü	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	Ü	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG_L	0.5	Ü	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	Ü	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.75	U	
8260C	METHYL CYCLOREXANE METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	UJ	•
8260C 8260C	TOLUENE	127-18-4	UG L	0.5	U	С
8260C 8260C	TRANS-1.2-DICHLOROETHENE					
8260C 8260C	TRANS-1,2-DICHLOROETHENE TRANS-1,3-DICHLOROPROPENE	156-60-5	UG_L	0.5	U	
8260C 8260C	- ,	10061-02-6	UG_L	0.5		
	TRICHLOROETHENE	79-01-6	UG_L	0.36	J	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	11	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	0.17	U	

		Sample	Delivery Group Lab ID Sample ID	BE ⁻ TRIP B		
			Sample Date Sample Type	12	2/29/2015 rip Blank	
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG_L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG_L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG_L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG_L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG_L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	U	
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG_L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1.3-DICHLOROBENZENE	541-73-1	UG L	0.5	Ū	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	Ū	
8260C	2-BUTANONE	78-93-3	UG L	2.5	Ü	
8260C	2-HEXANONE	591-78-6	UG L	2.5	Ü	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	Ü	
8260C	ACETONE	67-64-1	UG L	2.5	UJ	С
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	Ü	
8260C	BROMOFORM	75-25-2	UG L	0.5	Ü	
8260C	BROMOMETHANE	74-83-9	UG L	1	Ü	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	Ü	
8260C	CHLOROETHANE	75-00-3	UG L	1	Ü	
8260C	CHLOROFORM	67-66-3	UG L	0.5	Ü	
8260C	CHLOROMETHANE	74-87-3	UG L	1	Ü	
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	Ü	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	Ü	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	U	
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	Ü	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	Ü	
8260C	ETHYLBENZENE ETHYLBENZENE	100-41-4	UG L	0.5	Ü	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	Ü	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL ACEIATE METHYL CYCLOHEXANE	108-87-2	UG L	0.75	U	
8260C	METHYL CYCLONEXANE METHYL TERT-BUTYL ETHER	1634-04-4	UG_L	0.5	U	
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C 8260C	TETRACHLOROETHENE	127-18-4	UG_L	0.5	UJ	_
8260C		108-88-3	_	0.5	U	С
	TOLUENE TRANS 1.2 DICHI OPOETHENE	108-88-3 156-60-5	UG_L			
8260C	TRANS-1,2-DICHLOROETHENE		UG_L	0.5	U	-
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG_L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG_L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG_L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG_L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG_L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG_L	NA	Į	

Notes:UG_L=
NA =
Qual =
RC = Micrograms per liter Not analyzed Final qualifiers (See Attachment B) Reason codes (See Attachment C)

Appendix C Analytical Data Validation – ARCADIS





Northrop Grumman Corporation- Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC9792 and JC9923

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24833R December 28, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC9792 and JC9923 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis		6		
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	РСВ	MET	MISC
	TB120215PP1	JC9792-1	Water	12/02/2015		Х				
JC9792	FB120215PP1	JC9792-2	Water	12/02/2015		Х	Χ			
JC9/92	BPOW 6-5	JC9792-3	Water	12/02/2015		Х	Х			
	BPOW 6-6	JC9792-4	Water	12/02/2015		Х	Х			
	BPOW5-3	JC9923-1	Water	12/03/2015		Х	Х			
JC9923	FB120315PP1	JC9923-2	Water	12/03/2015		Х	Х			
	TB120315PP1	JC9923-3	Water	12/03/2015		Х				

Note:

1. Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		orted		mance	Not
	No Y		No	Yes	Required
1. Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
3. Collection Technique (grab, composite, etc.)		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		X	
8. Sample preservation verification (as applicable)		Х		X	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to < 6°C; preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required in SDGs JC9792 or JC9923.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9792 and JC9923.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with these SDGs.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC9792 or JC9923.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in SDG JC9792 in sample location FB120215PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROM	ETRY (GC/	MS)			
Tier II Validation					
Holding times & Temperature		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)					Х
Matrix Spike Duplicate(MSD)					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)					Х
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9792 or JC9923.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with these SDGs.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMET	ΓRY (GC/	MS)			
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: XISA HORSE

DATE: December 28, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST	GN FB	CHAIN OF CUSTODY Accutest New Jersey/SPL Environmental												PA	AGE		lo	F					
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Client / Reporting Information	74 72 740			Inform		A 1996 B	(3° 1)	414	100			KIE.	90-19	Req	ueste	d Analys	ls (see	TEST	CODE	sheet)		100	Matrix Codes
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Soma Das, soma.das@arcadis-us.com	144014a	1996.1514 NAVIJ 630 Plaza Drive, Suite 600						- 1	∄	×.	1					1		1	AIR - Air SOL - Other Solid				
Phone # Fax #	CREAT PURCHASE	Order #	roer# Cky State Zip					P I	ă	4,2				1	1		l	WP - Wipe					
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JC9792: Chain of Custody Page 1 of 3



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JC9792: Chain of Custody Page 2 of 3



Report of Analysis

Client Sample ID: TB120215PP1

Lab Sample ID:JC9792-1Date Sampled:12/02/15Matrix:AQ - Trip Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100904.D 1 12/04/15 MD n/a n/a V1B4777

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



Page 2 of 2

Report of Analysis

Client Sample ID: TB120215PP1

Lab Sample ID:JC9792-1Date Sampled:12/02/15Matrix:AQ - Trip Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6 75-01-4	Trichloroethylene Vinyl chloride m,p-Xylene	ND ND ND	0.50 0.50 0.50	0.024 0.032 0.13	ug/l ug/l ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2				
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	Total TIC, Volatile			0		ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



4

4

Report of Analysis

Client Sample ID: FB120215PP1

Lab Sample ID:JC9792-2Date Sampled:12/02/15Matrix:AQ - Field Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100905.D 1 12/04/15 MD n/a n/a V1B4777

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.1	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



Page 2 of 2

Report of Analysis

Client Sample ID: FB120215PP1

Lab Sample ID:JC9792-2Date Sampled:12/02/15Matrix:AQ - Field Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6 75-01-4 95-47-6	Trichloroethylene Vinyl chloride m,p-Xylene o-Xylene	ND ND ND ND	0.50 0.50 0.50 0.50	0.024 0.032 0.13 0.029	ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2				
2199-69-1 460-00-4	1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	101% 102%		78-1: 77-1:			
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	alkene Total TIC, Volatile		8.24	.81 .81		ug/l ug/l	J _N J _N

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



4

Report of Analysis

Client Sample ID: BPOW 6-5

Lab Sample ID:JC9792-3Date Sampled:12/02/15Matrix:AQ - Ground WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100906.D 1 12/04/15 MD n/a n/a V1B4777

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units Q
67-64-1	Acetone	ND	5.0	0.91	ug/l
78-93-3	2-Butanone	ND	5.0	0.57	ug/l
71-43-2	Benzene	ND	0.50	0.057	ug/l
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l
75-25-2	Bromoform	ND	0.50	0.046	ug/l
74-83-9	Bromomethane	ND	0.50	0.077	ug/l
75-15-0	Carbon disulfide	0.89	0.50	0.028	ug/l
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l
75-00-3	Chloroethane	ND	0.50	0.037	ug/l
67-66-3	Chloroform	ND	0.50	0.031	ug/l
74-87-3	Chloromethane	ND	0.50	0.044	ug/l
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l
76-13-1	Freon 113	ND	1.0	0.10	ug/l
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l
100-42-5	Styrene	ND	0.50	0.028	ug/l
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l
108-88-3	Toluene	ND	0.50	0.044	ug/l

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



Page 2 of 2

4

Report of Analysis

Client Sample ID: BPOW 6-5

Lab Sample ID:JC9792-3Date Sampled:12/02/15Matrix:AQ - Ground WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6 75-01-4 95-47-6	Trichloroethylene Vinyl chloride m,p-Xylene o-Xylene	ND ND ND ND	0.50 0.50 0.50 0.50	0.024 0.032 0.13 0.029	ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2				
2199-69-1 460-00-4	1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	101% 102%		78-1 77-1			
CAS No.	Tentatively Identified Comp	R.T.	Est.	Conc.	Units	Q	
	Total TIC, Volatile			0		ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$



4

Report of Analysis

Client Sample ID: BPOW 6-6

Lab Sample ID:JC9792-4Date Sampled:12/02/15Matrix:AQ - Ground WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100907.D 1 12/04/15 MD n/a n/a V1B4777

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	0.40	0.50	0.028	ug/l	J
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



Page 2 of 2

4

Report of Analysis

Client Sample ID: BPOW 6-6

Lab Sample ID:JC9792-4Date Sampled:12/02/15Matrix:AQ - Ground WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6 75-01-4 95-47-6	Trichloroethylene Vinyl chloride m,p-Xylene o-Xylene	ND ND ND ND	0.50 0.50 0.50 0.50	0.024 0.032 0.13 0.029	ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2				
2199-69-1 460-00-4	1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	103% 104%		78-1 77-1	14% 15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	Total TIC, Volatile			0		ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank



Report of Analysis

Client Sample ID: FB120215PP1

 Lab Sample ID:
 JC9792-2
 Date Sampled:
 12/02/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/03/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199455.D
 1
 12/16/15
 AMA
 12/05/15
 M:OP45645
 M:MSI3717

Run #2

Run #1 820 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.24 0.093 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 66% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 60% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



Report of Analysis

By

AMA

12/05/15

 Client Sample ID:
 BPOW 6-5

 Lab Sample ID:
 JC9792-3
 I

 Matrix:
 AQ - Ground Water
 I

 Method:
 SW846 8270D BY SIM SW846 3510C
 I

Analyzed

12/16/15

Method: SW846 8270D BY SIM SW846 3510C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF

1

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: n/a

M:OP45645

Prep Date Prep Batch Analytical Batch

M:MSI3717

Initial Volume Final Volume
Run #1 940 ml 1.0 ml

File ID

I99456.D

Run #2

Run #1 a

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.081 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 72% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 65% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



Client Sample ID: **BPOW 6-6**

Lab Sample ID: JC9792-4 Date Sampled: 12/02/15 Matrix: AQ - Ground Water Date Received: 12/03/15 Method: n/a

SW846 8270D BY SIM SW846 3510C Percent Solids:

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99457.D 1 12/16/15 **AMA** 12/05/15 M:OP45645 M:MSI3717 Run #2

Report of Analysis

Final Volume Initial Volume Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 71% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 65% 1718-51-0 Terphenyl-d14 81% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



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JC9923: Chain of Custody Page 1 of 3



CHAIN OF CUSTODY
Accutest New Jersey/SPL Environmental

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JC9923: Chain of Custody Page 3 of 3



Report of Analysis

Client Sample ID: BPOW5-3 Lab Sample ID: JC9923-1

 Lab Sample ID:
 JC9923-1
 Date Sampled:
 12/03/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/04/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100962.D 1 12/08/15 MD n/a n/a V1B4779

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$



n/a

Report of Analysis

Client Sample ID: BPOW5-3 Lab Sample ID: JC9923-1

Date Sampled: 12/03/15 Matrix: AQ - Ground Water **Date Received:** 12/04/15 Method: **Percent Solids:** EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-11	14%		
460-00-4	4-Bromofluorobenzene	97%		77-11	15%		
CAS No.	Tentatively Identified Compo	unds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB120315PP1

Lab Sample ID:JC9923-2Date Sampled:12/03/15Matrix:AQ - Field Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100960.D	1	12/08/15	MD	n/a	n/a	V1B4779
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.8	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

4

Report of Analysis

Client Sample ID: FB120315PP1

Lab Sample ID:JC9923-2Date Sampled:12/03/15Matrix:AQ - Field Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2100 (0.1	1.2 Dishlambanan 14	000/		70 11	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-11	/ -		
460-00-4	4-Bromofluorobenzene	98%		77-11	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an e

RL = Reporting Limit

E = Indicates value exceeds calibration range

 $J = \ Indicates \ an \ estimated \ value$



4

Report of Analysis

Client Sample ID: TB120315PP1

Lab Sample ID:JC9923-3Date Sampled:12/03/15Matrix:AQ - Trip Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100961.D 1 12/08/15 MD V1B4779 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.4	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: TB120315PP1

Lab Sample ID: JC9923-3 **Date Sampled:** 12/03/15 Matrix: AQ - Trip Blank Water **Date Received:** 12/04/15 Method: EPA 524.2 REV 4.1 **Percent Solids:**

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	100%		77-1			
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: BPOW5-3
Lab Sample ID: JC9923-1
Matrix: AQ - Ground Water

Method: SW846 8270D BY SIM SW846 3510C **Pe**

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 12/03/15
Date Received: 12/04/15
Percent Solids: n/a

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99391.D 1 12/14/15 **AMA** 12/07/15 M:OP45658 M:MSI3715 Run #2

Run #1 950 ml 1.0 ml
Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane 0.39 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 77% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 68% 1718-51-0 Terphenyl-d14 84% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB120315PP1

 Lab Sample ID:
 JC9923-2
 Date Sampled:
 12/03/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/04/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199392.D
 1
 12/14/15
 AMA
 12/07/15
 M:OP45658
 M:MSI3715

Run #2

Run #1 900 ml Final Volume
1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 71% 26-121% 321-60-8 2-Fluorobiphenyl 64% 28-107% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

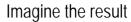
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation- Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC8577, JC8603 and JC8685

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24830R December 22, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC8577, JC8603, and JC8685 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis				
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	VOC	svoc	РСВ	MET	MISC
	BPOW5-6	JC8577-1	Water	11/13/2015		Х	Χ			
IC0E77	BPOW5-5	JC8577-2	Water	11/13/2015		Х	Χ			
JC8577	FB111315PP1	JC8577-3	Water	11/13/2015		Х	Х			
	TB111315PP1	JC8577-4	Water	11/13/2015		Х				
	BPOW5-2	JC8603-1	Water	11/12/2015		Х	Х			
100000	BPOW5-1	JC8603-2	Water	11/12/2015		Х	Х			
JC8603	FB111215PP1	JC8603-3	Water	11/12/2015		Х	Х			
	TB111215PP1	JC8603-4	Water	11/12/2015		Х				
	BPOW 5-4	JC8685-1	Water	11/16/2015		Х	Х			
JC8685	FB111615PP1	JC8685-2	Water	11/16/2015		Х	Х			
	TB111615PP1	JC8685-3	Water	11/16/2015		Х				

Notes:

- 1. Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.
- 2. SDG JC8577: Matrix spike analysis was performed on sample location BPOW5-6 for VOC.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		Reported		mance ptable	Not	
	No	Yes	No	Yes	Required	
1. Sample receipt condition		Х		Х		
2. Requested analyses and sample results		Х		Х		
3. Collection Technique (grab, composite, etc.)		Х		Х		
4. Methods of analysis		Х		Х		
5. Reporting limits		Х		Х		
6. Sample collection date		Х		Х		
7. Laboratory sample received date		Х		X		
8. Sample preservation verification (as applicable)		Х		X		
9. Sample preparation/extraction/analysis dates		Х		Х		
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х		
11. Narrative summary of QA or sample problems provided		Х		Х		
12. Data Package Completeness and Compliance		Х		Х		

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to < 6°C; preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SDG JC8577:			
BPOW5-5	Acetone	Detected sample results <rl <bal<="" and="" td=""><td>"UB" at the RL</td></rl>	"UB" at the RL
SDG JC8603:			
BPOW5-1	Acetone	Detected sample results <rl <bal<="" and="" td=""><td>"UB" at the RL</td></rl>	"UB" at the RL
SDG JC8685:			
BPOW 5-4	Acetone Methylene Chloride	Detected sample results <rl <bal<="" and="" td=""><td>"UB" at the RL</td></rl>	"UB" at the RL

RL Reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC

analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS exhibited acceptable recoveries in SDG JC8577.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC8603 and JC8685.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits in SDG JC8685.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SDG JC8577:		
BPOW5-6 BPOW5-5 FB111315PP1 TB111315PP1	2-Butanone	>UL
SDG JC8603:		
BPOW5-2 BPOW5-1 TB111215PP1	2-Butanone	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
the upper central limit (III.)	Non-detect	No Action
> the upper control limit (UL)	Detect	J

Control Limit	Sample Result	Qualification
the lower central limit (LL) but > 400/	Non-detect	UJ
< the lower control limit (LL) but > 10%	Detect	J
< 10%	Non-detect	R
< 10%	Detect	J

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with these SDGs.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

The laboratory duplicate sample results exhibited RPD within the control limit in SDG JC8577.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC8603 and JC8685.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in SDG JC8577 in sample locations: BPOW5-5, FB111315PP1 and TB111315PP1; SDG JC8603 in sample locations: BPOW5-1, FB111215PP1 and TB111215PP1; and, SDG JC8685 sample locations: BPOW 5-4 and FB111615PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times & Temperature		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х	Х		
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)		Х		Х	
Matrix Spike Duplicate(MSD)					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC8577, JC8603 or JC8685.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits for SDGs JC8577, JC8603 and JC8685.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with these SDGs.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times		Х		X	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		X		Х	
B. Equipment blanks		X		Х	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		Х	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)					Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: Xisa Horlan

DATE: December 22, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

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CHAIN OF CUSTODY
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JC8577: Chain of Custody Page 2 of 4

Client Sample ID: BPOW5-6 Lab Sample ID: JC8577-1

Date Sampled: 11/13/15 Matrix: AQ - Ground Water **Date Received:** 11/13/15 Method: Percent Solids: n/a EPA 524.2 REV 4.1

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100652.D 1 11/17/15 MD V1B4766 n/an/a

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	0.15	0.50	0.028	ug/l	J
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: BPOW5-6 Lab Sample ID:

JC8577-1 **Date Sampled:** 11/13/15 Matrix: **Date Received:** 11/13/15 AQ - Ground Water Method: Percent Solids: n/a EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2100 (0.1	1 2 Distinct 14	070/		70.1	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	97%		78-1			
460-00-4	4-Bromofluorobenzene	99%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Conc.	Units	Q		
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW5-5 Lab Sample ID: JC8577-2

Lab Sample ID:JC8577-2Date Sampled:11/13/15Matrix:AQ - Ground WaterDate Received:11/13/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100653.D111/17/15MDn/an/aV1B4766

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone 5.0	1.3	5.0	0.91	ug/l	√ UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	у ОВ
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: BPOW5-5 Lab Sample ID: JC8577-2

 Lab Sample ID:
 JC8577-2
 Date Sampled:
 11/13/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/13/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	99%		78-1	14%		
460-00-4	4-Bromofluorobenzene	101%		77-1	15%		
CAS No.	Tentatively Identified Compo	Fentatively Identified Compounds				Units	Q
78-84-2	Propanal, 2-methyl-		8.86	.54		ug/l	JN
	Total TIC, Volatile			.54		ug/l	JN

ND = Not detected MDL = Method Detection Limit J =

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB111315PP1

Lab Sample ID:JC8577-3Date Sampled:11/13/15Matrix:AQ - Field Blank WaterDate Received:11/13/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100657.D 1 11/17/15 MD n/a V1B4766 n/a Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.9	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Client Sample ID: FB111315PP1

Lab Sample ID:JC8577-3Date Sampled:11/13/15Matrix:AQ - Field Blank WaterDate Received:11/13/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1	1.2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	101%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
287-92-3	Cyclopentane		8.24	24		ug/l	JN
	Total TIC, Volatile			24		ug/l	J N

ND = Not detected MDL = Method Detection Limit J

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

Client Sample ID: TB111315PP1

Lab Sample ID:JC8577-4Date Sampled:11/13/15Matrix:AQ - Trip Blank WaterDate Received:11/13/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100658.D	1	11/17/15	MD	n/a	n/a	V1B4766

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.7	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB111315PP1

Lab Sample ID: JC8577-4 **Date Sampled:** 11/13/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/13/15 Method: EPA 524.2 REV 4.1 Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	99%		78-1	14%		
460-00-4	4-Bromofluorobenzene	101%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	1		7.61	1.1		/1	T
	unknown		7.61	1.1		ug/l	JN
	Total TIC, Volatile			1.1		ug/l	JN

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: BPOW5-6 Lab Sample ID:

JC8577-1 **Date Sampled:** 11/13/15 Matrix: AQ - Ground Water Date Received: 11/13/15

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99234.D 1 11/28/15 **AMA** 11/16/15 M:OP45433 M:MSI3705

Run #2

Initial Volume Final Volume Run #1 970 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.078 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 81% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 71% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: BPOW5-5

Lab Sample ID: JC8577-2 **Date Sampled:** 11/13/15 Matrix: AQ - Ground Water Date Received: 11/13/15

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99235.D 1 11/28/15 **AMA** 11/16/15 M:OP45433 M:MSI3705

Run #2

Final Volume Initial Volume Run #1 970 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane 0.42 0.21 0.078 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 84% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 73% 1718-51-0 Terphenyl-d14 84% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB111315PP1 Lab Sample ID: JC8577-3

Date Sampled: 11/13/15 Matrix: AQ - Field Blank Water Date Received: 11/13/15 Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99236.D 1 11/28/15 **AMA** 11/16/15 M:OP45433 M:MSI3705

Run #2

Final Volume Initial Volume Run #1 950 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 79% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 72% 1718-51-0 Terphenyl-d14 89% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC8603: Chain of Custody Page 1 of 5



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> JC8603: Chain of Custody Page 3 of 5

INGUN 1 On Ice 2. Cooler Temp



Client Sample ID: BPOW5-2 Lab Sample ID: JC8603-1

 Lab Sample ID:
 JC8603-1
 Date Sampled:
 11/12/15

 Matrix:
 AQ - Water
 Date Received:
 11/14/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100668.D111/18/15MDn/an/aV1B4766

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Date Sampled: 11/12/15

Date Received: 11/14/15

Percent Solids: n/a

Report of Analysis

Client Sample ID: BPOW5-2 Lab Sample ID: JC8603-1

Matrix: AQ - Water Method: EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	101%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

 Client Sample ID:
 BPOW5-1

 Lab Sample ID:
 JC8603-2
 Date Sampled:
 11/12/15

 Matrix:
 AQ - Water
 Date Received:
 11/14/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100669.D	1	11/18/15	MD	n/a	n/a	V1B4766

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units Q
67-64-1	Acetone 5.0	0.94	5.0	0.91	ug/l J UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l
71-43-2	Benzene	ND	0.50	0.057	ug/l
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l
75-25-2	Bromoform	ND	0.50	0.046	ug/l
74-83-9	Bromomethane	ND	0.50	0.077	ug/l
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l
75-00-3	Chloroethane	ND	0.50	0.037	ug/l
67-66-3	Chloroform	ND	0.50	0.031	ug/l
74-87-3	Chloromethane	ND	0.50	0.044	ug/l
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l
76-13-1	Freon 113	ND	1.0	0.10	ug/l
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l
100-42-5	Styrene	ND	0.50	0.028	ug/l
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l
108-88-3	Toluene	ND	0.50	0.044	ug/l

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: BPOW5-1 Lab Sample ID: JC8603-2 **Date Sampled:** 11/12/15 Matrix: **Date Received:** 11/14/15 AQ - Water Method: Percent Solids: n/a EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
2199-69-1	1,2-Dichlorobenzene-d4	99%		78-1	14%		
460-00-4	4-Bromofluorobenzene	102%		77-1			
CAS No.	Tentatively Identified Comp	ounds	R.T.	Est.	Conc.	Units	Q
78-84-2	Propanal, 2-methyl- Total TIC, Volatile		8.85	.56		ug/l ug/l	JN J N
	Total Tie, Volatile			.50		ug/1	2 IN

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: FB111215PP1

Lab Sample ID:JC8603-3Date Sampled:11/12/15Matrix:AQ - Field Blank WaterDate Received:11/14/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100707.D	1	11/20/15	MD	n/a	n/a	V1B4768
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	3.1	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	0.17	0.50	0.047	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

4

Report of Analysis

Client Sample ID: FB111215PP1

Lab Sample ID:JC8603-3Date Sampled:11/12/15Matrix:AQ - Field Blank WaterDate Received:11/14/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	100%		77-1	15%		
CAS No.	Tentatively Identified Compo	unda	R.T.	Est	Cono	Units	Λ
CAS No.	Tentatively Identified Compo	unus	к. 1.	ESt.	Conc.	Units	Ų
	alkene		8.26	24		ug/l	JN
	Total TIC, Volatile			24		ug/l	JN

ND = Not detected MDL = Method Detection Limit J = Indicates the substitution of

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: TB111215PP1

Lab Sample ID:JC8603-4Date Sampled:11/12/15Matrix:AQ - Trip Blank WaterDate Received:11/14/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100667.D 1 11/17/15 MD V1B4766 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.8	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: TB111215PP1

Lab Sample ID: JC8603-4 **Date Sampled:** 11/12/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/14/15 Method: EPA 524.2 REV 4.1 Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	100%		77-1	15%		
CAS No.	Tentatively Identified Compe	ounds	R.T.	Est.	Conc.	Units	Q
67-63-0	Isopropyl Alcohol		7.61	1.2		ug/l	JN
	Total TIC, Volatile			1.2		ug/l	J_{N}

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

By

AMA

11/17/15

Client Sample ID: BPOW5-2 Lab Sample ID: JC8603-1 Matrix: AO - Water

File ID

I99223.D

 Matrix:
 AQ - Water

 Method:
 SW846 8270D BY SIM SW846 3510C

DF

1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 11/12/15
Date Received: 11/14/15
Percent Solids: n/a

M:OP45450

Prep Date Prep Batch Analytical Batch

M:MSI3705

Run #2

Run #1 880 ml 1.0 ml

Run #2

Run #1 a

CAS No. Compound Result RL MDL Units Q

Analyzed

11/27/15

123-91-1 1,4-Dioxane ND 0.23 0.086 ug/l

CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits

 4165-60-0
 Nitrobenzene-d5
 74%
 26-121%

 321-60-8
 2-Fluorobiphenyl
 65%
 28-107%

 1718-51-0
 Terphenyl-d14
 88%
 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: BPOW5-1 Lab Sample ID: JC8603-2 Matrix: AQ - Water

Method: SW846 8270D BY SIM SW846 3510C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY Date Sampled: 11/12/15 Date Received: 11/14/15 Percent Solids: n/a

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99224.D 1 11/27/15 **AMA** 11/17/15 M:OP45450 M:MSI3705 Run #2

Initial Volume Final Volume Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 68% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 66% 1718-51-0 Terphenyl-d14 84% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB111215PP1 Lab Sample ID: JC8603-3

 Lab Sample ID:
 JC8603-3
 Date Sampled:
 11/12/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/14/15

 Method:
 SW846 8270D BY SIM SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a R46141.D 1 11/19/15 AMA 11/17/15 M:OP45457 M:MSR1697

Run #2

Run #1 970 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.078 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 91% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 71% 1718-51-0 Terphenyl-d14 93% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC8685: Chain of Custody

Page 3 of 4



4

Report of Analysis

Client Sample ID: BPOW 5-4 Lab Sample ID: JC8685-1

Lab Sample ID:JC8685-1Date Sampled:11/16/15Matrix:AQ - Ground WaterDate Received:11/17/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100684.D111/19/15MDn/an/aV1B4767

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone 5.0	-1.7-	5.0	0.91	ug/l	1	UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	•	OD
71-43-2	Benzene	ND	0.50	0.057	ug/l		
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l		
75-25-2	Bromoform	ND	0.50	0.046	ug/l		
74-83-9	Bromomethane	ND	0.50	0.077	ug/l		
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l		
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l		
75-00-3	Chloroethane	ND	0.50	0.037	ug/l		
67-66-3	Chloroform	ND	0.50	0.031	ug/l		
74-87-3	Chloromethane	ND	0.50	0.044	ug/l		
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l		
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l		
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l		
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l		
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l		
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l		
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l		
76-13-1	Freon 113	ND	1.0	0.10	ug/l		
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l		
75-09-2	Methylene chloride 0.50	0.096	0.50	0.047	ug/l	/ U	IB
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l		
100-42-5	Styrene	ND	0.50	0.028	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l		
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l		
108-88-3	Toluene	ND	0.50	0.044	ug/l		

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

 $N = \ Indicates \ presumptive \ evidence \ of \ a \ compound$



4

Report of Analysis

Client Sample ID: BPOW 5-4 Lab Sample ID: JC8685-1

 Lab Sample ID:
 JC8685-1
 Date Sampled:
 11/16/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/17/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	99%		78-1	14%		
460-00-4	4-Bromofluorobenzene	101%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
67-63-0	Isopropyl Alcohol		7.65	1.6		ug/l	JN
	Total TIC, Volatile			1.6		ug/l	JN

ND = Not detected MDL = Method Detection Limit J = Indicate MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB111615PP1

Lab Sample ID:JC8685-2Date Sampled:11/16/15Matrix:AQ - Field Blank WaterDate Received:11/17/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100685.D	1	11/19/15	MD	n/a	n/a	V1B4767
Pun #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	4.0	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	0.15	0.50	0.047	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

4

Report of Analysis

Client Sample ID: FB111615PP1

Lab Sample ID:JC8685-2Date Sampled:11/16/15Matrix:AQ - Field Blank WaterDate Received:11/17/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6 75-01-4 95-47-6	Trichloroethylene Vinyl chloride m,p-Xylene o-Xylene	ND ND ND	0.50 0.50 0.50 0.50	0.024 0.032 0.13 0.029	ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1 460-00-4	1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	99% 101%		78-1 77-1			
CAS No.	Tentatively Identified Comp	ounds	R.T.	Est.	Conc.	Units	Q
78-84-2	alkene Propanal, 2-methyl- Total TIC, Volatile		8.28 8.89	24 .71 24.7	1	ug/l ug/l ug/l	J N JN J N

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: TB111615PP1

Lab Sample ID: JC8685-3 **Date Sampled:** 11/16/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/17/15 Method: Percent Solids: n/a EPA 524.2 REV 4.1

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100686.D 1 11/19/15 MD V1B4767 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.7	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: TB111615PP1

Lab Sample ID: JC8685-3 **Date Sampled:** 11/16/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/17/15 Method: EPA 524.2 REV 4.1 Percent Solids: n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
05 47 6	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: BPOW 5-4 Lab Sample ID: JC8685-1

Date Sampled: 11/16/15 Matrix: AQ - Ground Water Date Received: 11/17/15

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99179.D 1 11/25/15 **AMA** 11/18/15 M:OP45466 M:MSI3703

Run #2

Final Volume Initial Volume Run #1 1000 ml 1.0 ml

Terphenyl-d14

Run #2

1718-51-0

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane 0.28 0.20 0.076 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 87% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 83%

88%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

29-129%



Report of Analysis

Client Sample ID: FB111615PP1 Lab Sample ID: JC8685-2

 Lab Sample ID:
 JC8685-2
 Date Sampled:
 11/16/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/17/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199180.D
 1
 11/25/15
 AMA
 11/18/15
 M:OP45466
 M:MSI3703

Run #2

Run #1 950 ml 1.0 ml

Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 77% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 75% 1718-51-0 Terphenyl-d14 86% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

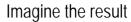
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation- Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC8939, JC9090 and JC9091

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24831R December 22, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC8939, JC9090 and JC9091 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis				
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	РСВ	MET	MISC
	RE 117D1	JC8939-1	Water	11/18/2015		Х	Х			
JC8939	RE 117D2	JC8939-2	Water	11/18/2015		Χ	Х			
100939	FB111815PP1	JC8939-3	Water	11/18/2015		Х	Χ			
	TB111815PP1	JC8939-4	Water	11/18/2015		Х				
	BPOW5-7	JC9090-1	Water	11/20/2015		Х	Х			
JC9090	FB112015PP1	JC9090-2	Water	11/20/2015		Х	Х			
	TB112015PP2	JC9090-3	Water	11/20/2015		Х				
100001	RE119D1	JC9091-1	Water	11/20/2015		Х	Х			
JC9091	TB112015PP1	JC9091-2	Water	11/20/2015		Х				

Notes:

- 1. Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.
- 2. SDG JC8939: Matrix spike/matrix spike duplicate analysis was performed on sample location RE 117D2 for VOC and SVOC.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		Reported		mance	Not
	No	Yes	No	Yes	Required
1. Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
3. Collection Technique (grab, composite, etc.)		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		X	
8. Sample preservation verification (as applicable)		Х		X	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 8260C, 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2			Cool to < 6°C;
SW-846 8260C	Water	14 days from collection to analysis	preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination in SDGs JC8939 and JC9091.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SDG JC9090:			
BPOW5-7	Acetone	Detected sample results >RL and <bal< td=""><td>"UB" at the RL</td></bal<>	"UB" at the RL
BPOV5-7	TIC: Unknown (RT7.60)	Detected sample results less than 5 times blank result	R

RL Reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9090 or JC9091.

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SDG JC8939:	
RE 117D2	All compounds , except Freon 113

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
. 111	Non-detect	UJ
> UL	Detect	J

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits in SDGs JC8939, JC9090 and JC9091.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with these SDGs.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC8939, JC9090 or JC9091.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in SDG JC9090 in sample locations: BPOW5-7 and FB112015PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2 and 8260C	Repo	mance ptable	Not Required		
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/I	MS)			
Tier II Validation					
Holding times & Temperature		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)		Х		Х	
Matrix Spike Duplicate(MSD)		Х		Х	
MS/MSD Precision (RPD)		Х	Х		
Field/Lab Duplicate (RPD)					Х
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries in SDG JC8939.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9090 and JC9091.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits for SDGs JC8939, JC9090 and JC9091.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with these SDGs.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times		Х		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		Х	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: XISA HOLL

DATE: December 22, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

6WFB WFB

CHAIN OF CUSTODY Accutest New Jersey/SPL Environmental

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JC8939: Chain of Custody

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Report of Analysis

Client Sample ID: RE 117D1

 Lab Sample ID:
 JC8939-1
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 2D150433.D 1 11/24/15 BK n/a n/a V2D6321

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.75	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: RE 117D1

Lab Sample ID: JC8939-1 **Date Sampled:** 11/18/15 **Date Received:** 11/19/15 Matrix: AQ - Ground Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	9.4	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
					-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1050 50 5	D.1. G	1000		= - 1	2001		
1868-53-7	Dibromofluoromethane	102%		76-1	20%		
17060-07-0	1,2-Dichloroethane-D4	100%		73-1	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	102%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: RE 117D2

 Lab Sample ID:
 JC8939-2
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 2D150333.D 1 11/21/15 BK n/a n/a V2D6317

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units Q
67-64-1	Acetone	ND	10	3.3	ug/l J
71-43-2	Benzene	ND	0.50	0.24	ug/l
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l
75-25-2	Bromoform	ND	1.0	0.23	ug/l
74-83-9	Bromomethane	ND	2.0	0.42	ug/l
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l
75-00-3	Chloroethane	ND	1.0	0.34	ug/l
67-66-3	Chloroform	ND	1.0	0.19	ug/l
74-87-3	Chloromethane	ND	1.0	0.41	ug/l
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug∕l V
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l J
76-13-1	Freon 113	ND	5.0	0.52	ug/l
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l
100-42-5	Styrene	ND	1.0	0.27	ug/l
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug∕l ∀
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l J
108-88-3	Toluene	0.98	1.0	0.16	ug/l J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l J
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l J

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



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Report of Analysis

Client Sample ID: RE 117D2

Lab Sample ID: JC8939-2 **Date Sampled:** 11/18/15 Matrix: **Date Received:** 11/19/15 AQ - Ground Water Method: Percent Solids: n/a SW846 8260C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l	J	
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l	J	
	m,p-Xylene	ND	1.0	0.38	ug/l	J	
95-47-6	o-Xylene	ND	1.0	0.17	ug/l	J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1868-53-7	Dibromofluoromethane	100%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	98%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: FB111815PP1

Lab Sample ID:JC8939-3Date Sampled:11/18/15Matrix:AQ - Field Blank WaterDate Received:11/19/15Method:SW846 8260CPercent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	2D150331.D	1	11/21/15	BK	n/a	n/a	V2D6317
Dun #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB111815PP1

Lab Sample ID: JC8939-3 **Date Sampled:** 11/18/15 Matrix: **Date Received:** 11/19/15 AQ - Field Blank Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	99%		76-1	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-1	22%		
2037-26-5	Toluene-D8	99%		84-1	19%		
460-00-4	4-Bromofluorobenzene	101%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB111815PP1

 Lab Sample ID:
 JC8939-4
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Trip Blank Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D150332.D	1	11/21/15	BK	n/a	n/a	V2D6317
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Client Sample ID: TB111815PP1

Lab Sample ID: JC8939-4 **Date Sampled:** 11/18/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/19/15 Method: SW846 8260C Percent Solids: n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
					-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
1868-53-7	Dibromofluoromethane	100%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-12	22%		
2037-26-5	Toluene-D8	99%		84-1	19%		
460-00-4	4-Bromofluorobenzene	101%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: RE 117D1 Lab Sample ID: JC8939-1

Matrix: Method:

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 11/18/15 AQ - Ground Water Date Received: 11/19/15 SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99203.D 1 11/27/15 **AMA** 11/22/15 M:OP45518 M:MSI3704 Run #2

RL

MDL

Units

Q

Final Volume Initial Volume Run #1 950 ml 1.0 ml

CAS No. Compound 123-91-1

Run #2

1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 77% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 64% 1718-51-0 Terphenyl-d14 82% 29-129%

Result

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: RE 117D2 Lab Sample ID: JC8939-2

 Lab Sample ID:
 JC8939-2
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8270D BY SIM SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a 199186.D 1 11/26/15 AMA 11/22/15 M:OP45518 M:MSI3703

Run #2

Initial Volume Final Volume
Run #1 1000 ml 1.0 ml

Terphenyl-d14

Run #2

1718-51-0

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.20 0.076 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 75% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 66%

89%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

29-129%



Report of Analysis

Client Sample ID: FB111815PP1

 Lab Sample ID:
 JC8939-3
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/19/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199204.D
 1
 11/27/15
 AMA
 11/22/15
 M:OP45518
 M:MSI3704

Run #2

Initial Volume Final Volume Run #1 960 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.079 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 79% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 68% 1718-51-0 Terphenyl-d14 81% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



		NI													
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Client / Reporting Information		ON AND THE REAL PROPERTY.	www.accutes		, 133/3/10			Accute	st Quote #			Accur	est Job#	T	9090
Company Name	Project Name:		Information						Reque	sted Ana	lysis (see	TEST	CODE sh	eet)	Experimental I
Arcadis	i	AGMNYM622	235 // 002	2 Outpo	st We	is		1				T	T	1	Matrix Code:
Street Address 2	NY001496.31 Client Purchase Order	# NY001496_2015	BWing Informal Company Name Arcadis, U Street Address 630 Plaza [City Highlands Attention:	.S., Inc. Drive, Su	Attn: Attn:	ccts Pa	Zip B0129	Ss 524.2 Full List	8270 SIM IY DIOX						DW - Drinking W, GW - Ground Wa WW - Water SW - Surface Wa SO - Soil St Studge SED-Sediment OI - Oil LQ - Other Liquil AIR - Air SOt Other Soik WP - Wipe FEP-Field Blank EB-Equipment Blan RB - Rince Blank TB-Trip Blank
Field ID / Point of Collection	MEOH/DIVIel#	Dete Time	Sampled by Metrix	# of bottles	HO3	H2804 NONE DI Wate	MEOH	~ 1	205			,	. :		
1 BROW 5-7	u	120115 1528	KP GW			-1-1-1	- - -	-		+					LAB USE ONLY
2 FB112015PP2		120/15 1524 M	KD FB	2 2		+++	+++	<u> </u>		4-1				\perp	14918
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Data Deliverable Information

elinquished By: #100 Seal # 36 |

NYASP Category A
NYASP Category B
State Forms
EDD Format
X
Other COMMC+

| Intect | Not intact

Data Deliver

Commercial "A" (Level 1)

Commercial "B" (Level 2)

FULLT1 (Level 3+4)

NJ Reduced

Commercial "C"

ed By (Accutest PM): / Date:

Turnaround Time (Business days)

Std. 15 Business Days

X Std. 10 Business Days (by Contract only)

Son. 10 Business Days

19 Day RUSH

5 Day RUSH

3 Day EMERGENCY

2 Day EMERGENCY

1 Day EMERGENCY

ergency & Rush T/A data ava

JC9090: Chain of Custody

On los Cooler Temps.

SESSME

524,2 EN 11st V5245L4+40 UMS+F113

Jocs

11-20-15

Date Time:

Page 1 of 5

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JC9090: Chain of Custody

Page 3 of 5



Client Sample ID: BPOW5-7

Lab Sample ID: JC9090-1 **Date Sampled:** 11/20/15 Matrix: AQ - Ground Water Date Received: 11/20/15 Method: Percent Solids: n/a EPA 524.2 REV 4.1

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100758.D 1 11/24/15 MD n/a V1B4770 n/a

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone 5.0	1.1—	5.0	0.91	ug/l	X	UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l		OB
71-43-2	Benzene	ND	0.50	0.057	ug/l		
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l		
75-25-2	Bromoform	ND	0.50	0.046	ug/l		
74-83-9	Bromomethane	ND	0.50	0.077	ug/l		
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l		
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l		
75-00-3	Chloroethane	ND	0.50	0.037	ug/l		
67-66-3	Chloroform	ND	0.50	0.031	ug/l		
74-87-3	Chloromethane	ND	0.50	0.044	ug/l		
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l		
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l		
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l		
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l		
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l		
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l		
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l		
76-13-1	Freon 113	ND	1.0	0.10	ug/l		
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l		
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l		
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l		
100-42-5	Styrene	ND	0.50	0.028	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l		
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l		
108-88-3	Toluene	0.49	0.50	0.044	ug/l	J	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

4

Report of Analysis

Client Sample ID: BPOW5-7 Lab Sample ID: JC9090-1

 Lab Sample ID:
 JC9090-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q		
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l			
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l			
	m,p-Xylene	ND	0.50	0.13	ug/l			
95-47-6	o-Xylene	ND	0.50	0.029	ug/l			
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts			
2199-69-1	1.2-Dichlorobenzene-d4	99%		78-11	14%			
460-00-4	4-Bromofluorobenzene	102%		77-11	15%			
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q	
	unknown		7.60	.65		ug/l	_	R
	Total TIC, Volatile			65		ug/l		

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB112015PP1

Lab Sample ID:JC9090-2Date Sampled:11/20/15Matrix:AQ - Field Blank WaterDate Received:11/20/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100759.D 1 11/24/15 MD V1B4770 n/an/aRun #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.6	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	0.20	0.50	0.047	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

 $ND = Not detected \qquad MDL = Not MDL$

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



4

Report of Analysis

Client Sample ID: FB112015PP1

Lab Sample ID:JC9090-2Date Sampled:11/20/15Matrix:AQ - Field Blank WaterDate Received:11/20/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q		
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l			
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l			
	m,p-Xylene	ND	0.50	0.13	ug/l			
95-47-6	o-Xylene	ND	0.50	0.029	ug/l			
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts			
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-11	14%			
460-00-4	4-Bromofluorobenzene	102%		77-11	15%			
a.a		_			~	A.	_	
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q	
	unknown		7.60	.59		ug/l	J	N
	Total TIC, Volatile		7.00	.59		ug/l	J	
	Total Tie, Totalie			.57		45/1	3	Ν

ND = Not detected MDL = Method Detection Limit J = Indicates

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB112015PP2

Lab Sample ID:JC9090-3Date Sampled:11/20/15Matrix:AQ - Trip Blank WaterDate Received:11/20/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100760.D	1	11/24/15	MD	n/a	n/a	V1B4770
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: TB112015PP2

Lab Sample ID: JC9090-3 **Date Sampled:** 11/20/15 Matrix: **Date Received:** 11/20/15 AQ - Trip Blank Water Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	100%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

 Client Sample ID:
 BPOW5-7

 Lab Sample ID:
 JC9090-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99205.D 1 11/27/15 **AMA** 11/22/15 M:OP45518 M:MSI3704 Run #2

Initial Volume Final Volume
Run #1 950 ml 1.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.21	0.080	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
4165-60-0 321-60-8	Nitrobenzene-d5 2-Fluorobiphenyl	79% 69%		26-1 28-1		
1718-51-0	Terphenyl-d14	84%		29-1	29%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB112015PP1

 Lab Sample ID:
 JC9090-2
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/20/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a 199206.D 1 11/27/15 AMA 11/22/15 M:OP45518 M:MSI3704

Run #2

Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 82% 26-121% 321-60-8 2-Fluorobiphenyl 74% 28-107% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Accu	TEST:	GW W7B	.√. >	זְ	Accutest l	5 Route 1	ersey/SP 130. Davi	PL Envir	1 70111	menta	al	Y			FED-	-EX Traci	king #	#5	and the second		Bott	P tto Order (E_	10	OF
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JC9091: Chain of Custody

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JC9091: Chain of Custody

Page 3 of 4

Client Sample ID: RE119D1

Lab Sample ID: JC9091-1 **Date Sampled:** 11/20/15 Matrix: AQ - Ground Water **Date Received:** 11/20/15 Method: Percent Solids: n/a SW846 8260C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B137063.D	1	12/01/15	EH	n/a	n/a	V2B6106
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.72	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



4

Report of Analysis

Client Sample ID: RE119D1

 Lab Sample ID:
 JC9091-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1868-53-7	Dibromofluoromethane	105%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	115%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an

RL = Reporting Limit

E = Indicates value exceeds calibration range

 $J = \ Indicates \ an \ estimated \ value$



Client Sample ID: TB112015PP1

 Lab Sample ID:
 JC9091-2
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B137000.D	1	11/28/15	EH	n/a	n/a	V2B6102
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB112015PP1

Lab Sample ID: JC9091-2 **Date Sampled:** 11/20/15 Matrix: **Date Received:** 11/20/15 AQ - Ground Water Method: SW846 8260C **Percent Solids:** n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
1868-53-7	Dibromofluoromethane	102%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	103%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	102%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: RE119D1

 Lab Sample ID:
 JC9091-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199207.D
 1
 11/27/15
 AMA
 11/22/15
 M:OP45518
 M:MSI3704

Run #2

Initial Volume Final Volume Run #1 900 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 74% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 67% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

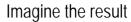
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation- Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC9220, JC9566 and JC9689

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24832R December 28, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC9220, JC9566 and JC9689 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample			Analysis			
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	РСВ	MET	MISC
	FB112315PP1	JC9220-1	Water	11/23/2015		Х	Х			
JC9220	TB112315PP1	JC9220-2	Water	11/23/2015		Х				
	RE118D1	JC9220-3	Water	11/23/2015		Х	Х			
	FB113015PP1	JC9566-1	Water	11/30/2015		Х	Х			
ICOECC	BPOW 6-1	JC9566-2	Water	11/30/2015		Χ	Х			
JC9566	BPOW 6-2	JC9566-3	Water	11/30/2015		Х	Х			
	TB113015PP1	JC9566-4	Water	11/30/2015		Χ				
	FB120115PP1	JC9689-1	Water	12/01/2015		Χ	Х			
	BPOW 6-3	JC9689-2	Water	12/01/2015		Χ	Х			
JC9689	BPOW 6-4	JC9689-3	Water	12/01/2015		Χ	Χ			
	REP120115PP1	JC9689-4	Water	12/01/2015	BPOW 6-4	Х	Х			
	TB120115PP1	JC9689-5	Water	12/01/2015		Х				

Note:

 Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		Reported		mance ptable	Not	
	No	Yes	No	Yes	Required	
1. Sample receipt condition		X		Х		
2. Requested analyses and sample results		Х		Х		
3. Collection Technique (grab, composite, etc.)		Х		Х		
4. Methods of analysis		Х		Х		
5. Reporting limits		Х		Х		
6. Sample collection date		Х		Х		
7. Laboratory sample received date		Х		Х		
8. Sample preservation verification (as applicable)		Х		Х		
9. Sample preparation/extraction/analysis dates		Х		Х		
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х		
11. Narrative summary of QA or sample problems provided		Х		Х		
12. Data Package Completeness and Compliance	•	Х		Х		

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 8260C, 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2			Cool to < 6°C;
SW-846 8260C	Water	14 days from collection to analysis	preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination in SDG JC9220.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required in SDG JC9566.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SDG JC9689:			
BPOW 6-3	Acetone	Detected sample results >RL and <bal< td=""><td>"UB" at the RL</td></bal<>	"UB" at the RL

RL Reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC

analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with SDGs JC9220 or JC9566.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC9689:				
BPOW 6-4/ REP120115PP1	All compounds	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample

concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in SDG JC9220. TICs were identified in SDG JC9566 in sample locations FB113015PP1; and, in SDG JC9689 in sample location FB12015PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2 and 8260C	Rep	Reported		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times & Temperature		X		X	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)					Х
Matrix Spike Duplicate(MSD)					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with SDG JC9220 and JC9566

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC9689:				
BPOW 6-4/ REP120115PP1	1,4-Dioxane	0.22 U	0.21 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

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DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times		Х		X	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		X		Х	
B. Equipment blanks		X		Х	
Laboratory Control Sample (LCS) %R		Х		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)		Х		Х	
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: Xisa Horlan

DATE: December 28, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

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JC9220: Chain of Custody Page 1 of 4



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JC9220: Chain of Custody Page 2 of 4



4

Report of Analysis

Client Sample ID: FB112315PP1

Lab Sample ID:JC9220-1Date Sampled:11/23/15Matrix:AQ - Field Blank WaterDate Received:11/24/15Method:SW846 8260CPercent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A156464.D	1	11/30/15	VC	n/a	n/a	V1A6717
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected M

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB112315PP1

Lab Sample ID: JC9220-1 **Date Sampled:** 11/23/15 **Date Received:** 11/24/15 Matrix: AQ - Field Blank Water Method: SW846 8260C Percent Solids: n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
					-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1050 50 5	D.1. G	1000/		= - 1	2001		
1868-53-7	Dibromofluoromethane	100%		76-1	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-1	22%		
2037-26-5	Toluene-D8	99%		84-1	19%		
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB112315PP1

 Lab Sample ID:
 JC9220-2
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Trip Blank Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1A156465.D 1 11/30/15 VC n/aV1A6717 n/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

 $N = \ Indicates \ presumptive \ evidence \ of \ a \ compound$



Page 2 of 2

Report of Analysis

Client Sample ID: TB112315PP1

Lab Sample ID: JC9220-2 **Date Sampled:** 11/23/15 Matrix: **Date Received:** 11/24/15 AQ - Trip Blank Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1050 50 5	Dil	1000/		5 - 1	2001		
1868-53-7	Dibromofluoromethane	100%		76-12			
17060-07-0	1,2-Dichloroethane-D4	97%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	99%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: RE 118D1

 Lab Sample ID:
 JC9220-3
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A156488.D	1	12/01/15	VC	n/a	n/a	V1A6718

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.57	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = M

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

Client Sample ID: RE 118D1

 Lab Sample ID:
 JC9220-3
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-0	Vinyl chloride	ND	1.0	0.22	ug/l		
75 01 .	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
	•				-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1060 52 7	D.1 G 4	000/		76.1	200/		
1868-53-7	Dibromofluoromethane	98%		76-1			
17060-07-0	1,2-Dichloroethane-D4	97%		73-1			
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	101%		78-1	17%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	T-4-1 TIC W-1-4:1-		0		/1		
	Total TIC, Volatile		0		ug/l		

ND = Not detected MDL = Method Detection Limit J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate Detection D

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: FB112315PP1

 Lab Sample ID:
 JC9220-1
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/24/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199247.D
 1
 12/01/15
 AMA
 11/24/15
 M:OP45543
 M:MSI3707

Run #2

Run #1 960 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.079 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 88% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 75% 1718-51-0 Terphenyl-d14 29-129% 86%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: RE 118D1 Lab Sample ID: JC9220-3 Date Sampled: 11/23/15 Matrix: AQ - Ground Water Date Received: 11/24/15 Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99248.D 1 12/01/15 **AMA** 11/24/15 M:OP45543 M:MSI3707 Run #2

Initial Volume Final Volume Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 67% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 60% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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Soma Das, soma.das@arcadis-us.com	NYWIN	16.1514, NA	113	100000	AUG 855						yubic			1=	1		- 1	.		. 1	- 1	SED-Sediment OI - Oil
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JC9566: Chain of Custody

Page 1 of 3



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	rgency & Rush T/A deta available VIA Labin		Ç	nle Custody	et he docum	antari ha		NJ Reduce									Hwen			2000	7000		47.00	10 m	name and a
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													<u> </u>	- 1100	w/CRCL										

JC9566: Chain of Custody Page 3 of 3

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Report of Analysis

Client Sample ID: FB113015PP1

Lab Sample ID:JC9566-1Date Sampled:11/30/15Matrix:AQ - Field Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100892.D	1	12/03/15	MD	n/a	n/a	V1B4776
Dun #2							

Run #1 5.0 ml Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.2	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

Client Sample ID: FB113015PP1

Lab Sample ID:JC9566-1Date Sampled:11/30/15Matrix:AQ - Field Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-1	14%		
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	unknown		7.61	.65		ug/l	JΝ
	Total TIC, Volatile			.65		ug/l	JN

ND = Not detected MDL = Method Detection Limit J

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

 Lab Sample ID:
 JC9566-2
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100893.D112/03/15MDn/an/aV1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

Date Sampled: 11/30/15 **Date Received:** 12/01/15 Matrix: AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride m,p-Xylene	ND ND	0.50 0.50	0.032 0.13	ug/l ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-1	14%		
460-00-4	4-Bromofluorobenzene	102%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

 Lab Sample ID:
 JC9566-3
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100894.D112/03/15MDn/an/aV1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Date Sampled: 11/30/15 **Date Received:** 12/01/15

n/a

Percent Solids:

4

Report of Analysis

Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
		100-1		=0.4			
2199-69-1	1,2-Dichlorobenzene-d4	103%		78-1	, .		
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
				0			
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates and J = Indicates

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB113015PP1 Lab Sample ID: JC9566-4

 Lab Sample ID:
 JC9566-4
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Trip Blank Water
 Date Received:
 12/01/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100895.D	1	12/03/15	MD	n/a	n/a	V1B4776
Run #2							

Run #1 5.0 ml Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: TB113015PP1

Lab Sample ID: JC9566-4 **Date Sampled:** 11/30/15 Matrix: AQ - Trip Blank Water **Date Received:** 12/01/15 Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2100 (0.1	100:11	1020/		70.1	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	,.		
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
				_			
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: FB113015PP1

Lab Sample ID: JC9566-1 **Date Sampled:** 11/30/15 Matrix: AQ - Field Blank Water Date Received: 12/01/15 Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

1.0 ml

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99338.D 1 12/10/15 **AMA** 12/02/15 M:OP45603 M:MSI3713 Run #2

Run# 2

Limits

Final Volume Initial Volume

900 ml

Run #1 Run #2

CAS No.

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1

Run#1

Surrogate Recoveries 4165-60-0 Nitrobenzene-d5 67% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 61% 1718-51-0 Terphenyl-d14 75% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



Page 1 of 1

- 4

Page 1 of 1

Report of Analysis

Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

 Lab Sample ID:
 JC9566-2
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 SW846 8270D BY SIM SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199339.D
 1
 12/10/15
 AMA
 12/02/15
 M:OP45603
 M:MSI3713

Run #2

Run #1 900 ml Final Volume
1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 72% 26-121% 321-60-8 2-Fluorobiphenyl 64% 28-107% 1718-51-0 Terphenyl-d14 75% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

Date Sampled: 11/30/15 Matrix: AQ - Ground Water Date Received: 12/01/15

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99340.D 1 12/10/15 **AMA** 12/02/15 M:OP45603 M:MSI3713

Run #2

Final Volume Initial Volume Run #1 890 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.085 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits

4165-60-0 Nitrobenzene-d5 80% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 71% 1718-51-0 Terphenyl-d14 76% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC9689: Chain of Custody

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JC9689: Chain of Custody

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Client Sample ID: FB120115PP1

Lab Sample ID:JC9689-1Date Sampled:12/01/15Matrix:AQ - Field Blank WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100883.D	1	12/03/15	MD	n/a	n/a	V1B4776
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.7	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

 $N = \ Indicates \ presumptive \ evidence \ of \ a \ compound$



Client Sample ID: FB120115PP1

Lab Sample ID: JC9689-1 **Date Sampled:** 12/01/15 Matrix: **Date Received:** 12/02/15 AQ - Field Blank Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2100 00 1	100:11	10.107		5 0.4	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	104%		78-1			
460-00-4	4-Bromofluorobenzene	105%		77-1	15%		
		_		_	_		_
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
			0.25	2		/1	
	alkene		8.25	2		ug/l	JN
	Total TIC, Volatile			2		ug/l	JN

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: BPOW 6-3 Lab Sample ID: JC9689-2

 Lab Sample ID:
 JC9689-2
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100886.D112/03/15MDn/an/aV1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone 5.0	0.92	5.0	0.91	ug/l	У	UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l		-
71-43-2	Benzene	ND	0.50	0.057	ug/l		
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l		
75-25-2	Bromoform	ND	0.50	0.046	ug/l		
74-83-9	Bromomethane	ND	0.50	0.077	ug/l		
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l		
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l		
75-00-3	Chloroethane	ND	0.50	0.037	ug/l		
67-66-3	Chloroform	ND	0.50	0.031	ug/l		
74-87-3	Chloromethane	ND	0.50	0.044	ug/l		
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l		
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l		
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l		
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l		
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l		
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l		
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l		
76-13-1	Freon 113	ND	1.0	0.10	ug/l		
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l		
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l		
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l		
100-42-5	Styrene	ND	0.50	0.028	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l		
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l		
108-88-3	Toluene	ND	0.50	0.044	ug/l		

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: BPOW 6-3 Lab Sample ID: JC9689-2

Date Sampled: 12/01/15 **Date Received:** 12/02/15 Matrix: AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	/ -		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
			0				
	Total TIC, Volatile		0		ug/l		

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW 6-4 Lab Sample ID: JC9689-3

 Lab Sample ID:
 JC9689-3
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 1B100887.D 1 12/03/15 MD n/a n/a V1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Date Sampled: 12/01/15 **Date Received:** 12/02/15

n/a

Percent Solids:

Report of Analysis

Client Sample ID: BPOW 6-4 Lab Sample ID: JC9689-3

Matrix: AQ - Ground Water Method: EPA 524.2 REV 4.1

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	/ -		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
			0				
	Total TIC, Volatile		0		ug/l		

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: REP120115PP1

Lab Sample ID:JC9689-4Date Sampled:12/01/15Matrix:AQ - Ground WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100885.D	1	12/03/15	MD	n/a	n/a	V1B4776
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: REP120115PP1

Lab Sample ID: JC9689-4 **Date Sampled:** 12/01/15 Matrix: **Date Received:** 12/02/15 AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	103%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB120115PP1

Lab Sample ID:JC9689-5Date Sampled:12/01/15Matrix:AQ - Trip Blank WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100884.D 1 12/03/15 MD V1B4776 n/an/aRun #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.3	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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Report of Analysis

Client Sample ID: TB120115PP1

Lab Sample ID: JC9689-5 **Date Sampled:** 12/01/15 Matrix: AQ - Trip Blank Water **Date Received:** 12/02/15 Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
		0.0-1		-0.4			
2199-69-1	1,2-Dichlorobenzene-d4	99%		78-11	/ -		
460-00-4	4-Bromofluorobenzene	102%		77-11	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
				0			
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: FB120115PP1

 Lab Sample ID:
 JC9689-1
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 a 199290.D 1 12/04/15 AMA 12/03/15 M:OP45613 M:MSI3710

Run #2

Run #1 900 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 74% 26-121% 321-60-8 2-Fluorobiphenyl 74% 28-107% 1718-51-0 Terphenyl-d14 86% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: **BPOW 6-3** Lab Sample ID: JC9689-2 Matrix: AQ - Ground Water

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 12/01/15 Date Received: 12/02/15 Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99291.D 1 12/04/15 **AMA** 12/03/15 M:OP45613 M:MSI3710 Run #2

Final Volume Initial Volume Run #1 880 ml 1.0 ml Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.23 0.086 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 83% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 78% 1718-51-0 Terphenyl-d14 89% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

 Client Sample ID:
 BPOW 6-4

 Lab Sample ID:
 JC9689-3
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99292.D 1 12/04/15 **AMA** 12/03/15 M:OP45613 M:MSI3710 Run #2

Run #1 910 ml 1.0 ml
Run #2

CAS No. Compound RLUnits Result **MDL** 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 80% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 76% 1718-51-0 Terphenyl-d14 89% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound

Q



Report of Analysis

Client Sample ID: REP120115PP1
Lab Sample ID: JC9689-4
Matrix: AQ - Ground Water

Method: SW846 8270D BY SIM SW846 3510C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 12/01/15 **Date Received:** 12/02/15

Percent Solids: n/a

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99293.D 1 12/04/15 **AMA** 12/03/15 M:OP45613 M:MSI3710 Run #2

Initial Volume Final Volume Run #1 950 ml 1.0 ml

Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 82% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 76% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

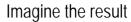
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation-Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC9792 and JC9923

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24833R December 28, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC9792 and JC9923 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis								
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	РСВ	MET	MISC				
	TB120215PP1	JC9792-1	Water	12/02/2015		Х								
JC9792	FB120215PP1	JC9792-2	Water	12/02/2015		Х	Χ							
JC9/92	BPOW 6-5	JC9792-3	Water	12/02/2015		Χ	Χ							
	BPOW 6-6	JC9792-4	Water	12/02/2015		Х	Х							
	BPOW5-3	JC9923-1	Water	12/03/2015		Х	Х							
JC9923	FB120315PP1	JC9923-2	Water	12/03/2015		Х	Х							
	TB120315PP1	JC9923-3	Water	12/03/2015		Х								

Note:

1. Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed	Rep	orted		mance	Not
	No	Yes	No	Yes	Required
1. Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
3. Collection Technique (grab, composite, etc.)		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		X	
8. Sample preservation verification (as applicable)		Х		X	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to < 6°C; preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required in SDGs JC9792 or JC9923.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9792 and JC9923.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with these SDGs.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC9792 or JC9923.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in SDG JC9792 in sample location FB120215PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROM	ETRY (GC/	MS)			
Tier II Validation					
Holding times & Temperature		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)					Х
Matrix Spike Duplicate(MSD)					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)					Х
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9792 or JC9923.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with these SDGs.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMET	ΓRY (GC/	MS)			
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: XISA HORSE

DATE: December 28, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST	GN FB		CHA Accutest N	ew Jers	sey/SPL	Enviro	nme	_	Y										PA	AGE		lo	F
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JC9792: Chain of Custody Page 1 of 3



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JC9792: Chain of Custody Page 2 of 3



Client Sample ID: TB120215PP1

Lab Sample ID:JC9792-1Date Sampled:12/02/15Matrix:AQ - Trip Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100904.D	1	12/04/15	MD	n/a	n/a	V1B4777
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB120215PP1

Lab Sample ID: JC9792-1 **Date Sampled:** 12/02/15 AQ - Trip Blank Water Matrix: **Date Received:** 12/03/15 Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2100 (0.1	100:11	1000/		70.1	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	,.		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
~.~.		_			~		_
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Terel TIC Welsells			0		/1	
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: FB120215PP1

Lab Sample ID:JC9792-2Date Sampled:12/02/15Matrix:AQ - Field Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100905.D	1	12/04/15	MD	n/a	n/a	V1B4777
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.1	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: FB120215PP1

Lab Sample ID:JC9792-2Date Sampled:12/02/15Matrix:AQ - Field Blank WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1.2-Dichlorobenzene-d4	101%		78-1	14%		
460-00-4	4-Bromofluorobenzene	102%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	alkene		8.24	.81		ug/l	JΝ
	Total TIC, Volatile			.81		ug/l	J N

ND = Not detected MDL = Method Detection Limit J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate <math>J = Indicates an estimate Detection D

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: BPOW 6-5 Lab Sample ID: JC9792-3

 Lab Sample ID:
 JC9792-3
 Date Sampled:
 12/02/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/03/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100906.D112/04/15MDn/an/aV1B4777

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	0.89	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MI

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: BPOW 6-5 Lab Sample ID: JC9792-3

Date Sampled: 12/02/15 Matrix: AQ - Ground Water **Date Received:** 12/03/15 Method: **Percent Solids:** EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-11	14%		
460-00-4	4-Bromofluorobenzene	102%		77-11	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW 6-6 Lab Sample ID: JC9792-4

Lab Sample ID:JC9792-4Date Sampled:12/02/15Matrix:AQ - Ground WaterDate Received:12/03/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100907.D 1 12/04/15 MD V1B4777 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	0.40	0.50	0.028	ug/l	J
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound

16



Page 2 of 2

4

Report of Analysis

Client Sample ID: BPOW 6-6 Lab Sample ID: JC9792-4

 Lab Sample ID:
 JC9792-4
 Date Sampled:
 12/02/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/03/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
2100 (0.1	1.2 Diable ask are as 44	1020/		70.1	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	103%		78-1			
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAC N-	T4-4	3	ът	E-4	C	TT 34	•
CAS No.	Tentatively Identified Compo	ounas	R.T.	Est.	Conc.	Units	Ų
	Total TIC, Volatile			0		ug/l	
	Total Tre, Colume			O		46/1	

ND = Not detected MDL = Method Detection Limit J = Indicates a

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB120215PP1

 Lab Sample ID:
 JC9792-2
 Date Sampled:
 12/02/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/03/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199455.D
 1
 12/16/15
 AMA
 12/05/15
 M:OP45645
 M:MSI3717

Run #2

Run #1 820 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.24 0.093 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 66% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 60% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

By

AMA

12/05/15

 Client Sample ID:
 BPOW 6-5

 Lab Sample ID:
 JC9792-3
 I

 Matrix:
 AQ - Ground Water
 I

 Method:
 SW846 8270D BY SIM SW846 3510C
 I

Analyzed

12/16/15

Method: SW846 8270D BY SIM SW846 3510C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF

1

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: n/a

M:OP45645

Prep Date Prep Batch Analytical Batch

M:MSI3717

Initial Volume Final Volume
Run #1 940 ml 1.0 ml

File ID

I99456.D

Run #2

Run #1 a

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.081 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 72% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 65% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: **BPOW 6-6**

Lab Sample ID: JC9792-4 Date Sampled: 12/02/15 Matrix: AQ - Ground Water Date Received: 12/03/15 Method: n/a

SW846 8270D BY SIM SW846 3510C Percent Solids:

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99457.D 1 12/16/15 **AMA** 12/05/15 M:OP45645 M:MSI3717 Run #2

Report of Analysis

Final Volume Initial Volume Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 71% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 65% 1718-51-0 Terphenyl-d14 81% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC9923: Chain of Custody Page 1 of 3



CHAIN OF CUSTODY
Accutest New Jersey/SPL Environmental

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JC9923: Chain of Custody Page 3 of 3



Client Sample ID: BPOW5-3 Lab Sample ID: JC9923-1

 Lab Sample ID:
 JC9923-1
 Date Sampled:
 12/03/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/04/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 1B100962.D 1 12/08/15 MD n/a n/a V1B4779

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: BPOW5-3 Lab Sample ID: JC9923-1

Date Sampled: 12/03/15 Matrix: AQ - Ground Water **Date Received:** 12/04/15 Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	rrogate Recoveries Run# 1			its		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	97%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	Total TIC, Volatile		0		ug/l		

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: FB120315PP1

Lab Sample ID:JC9923-2Date Sampled:12/03/15Matrix:AQ - Field Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100960.D	1	12/08/15	MD	n/a	n/a	V1B4779
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.8	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

4

Report of Analysis

Client Sample ID: FB120315PP1

Lab Sample ID:JC9923-2Date Sampled:12/03/15Matrix:AQ - Field Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2100 (0.1	1.2 Dishlambanan 14	000/		70 11	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-11	/ -		
460-00-4	4-Bromofluorobenzene	98%		77-11	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an e

RL = Reporting Limit

E = Indicates value exceeds calibration range

 $J = \ Indicates \ an \ estimated \ value$



4

Report of Analysis

Client Sample ID: TB120315PP1

Lab Sample ID:JC9923-3Date Sampled:12/03/15Matrix:AQ - Trip Blank WaterDate Received:12/04/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100961.D 1 12/08/15 MD V1B4779 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.4	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: TB120315PP1

Lab Sample ID: JC9923-3 **Date Sampled:** 12/03/15 Matrix: AQ - Trip Blank Water **Date Received:** 12/04/15 Method: EPA 524.2 REV 4.1 **Percent Solids:**

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	98%		78-1	14%		
460-00-4	4-Bromofluorobenzene	100%		77-1			
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: BPOW5-3
Lab Sample ID: JC9923-1
Matrix: AQ - Ground Water

Method: SW846 8270D BY SIM SW846 3510C **Pe**

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 12/03/15
Date Received: 12/04/15
Percent Solids: n/a

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99391.D 1 12/14/15 **AMA** 12/07/15 M:OP45658 M:MSI3715 Run #2

Run #1 950 ml 1.0 ml
Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane 0.39 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 77% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 68% 1718-51-0 Terphenyl-d14 84% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB120315PP1

 Lab Sample ID:
 JC9923-2
 Date Sampled:
 12/03/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/04/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199392.D
 1
 12/14/15
 AMA
 12/07/15
 M:OP45658
 M:MSI3715

Run #2

Run #1 900 ml Final Volume
1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 71% 26-121% 321-60-8 2-Fluorobiphenyl 64% 28-107% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

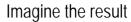
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation- Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC8939, JC9090 and JC9091

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24831R December 22, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC8939, JC9090 and JC9091 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis		6		
SDGs	Sample ID	Lab ID	Matrix	Collection Date	i arciit Garripic i	voc	svoc	РСВ	MET	MISC
	RE 117D1	JC8939-1	Water	11/18/2015		Х	Х			
JC8939	RE 117D2	JC8939-2	Water	11/18/2015		Х	Х			
100939	FB111815PP1	JC8939-3	Water	11/18/2015		Χ	Χ			
	TB111815PP1	JC8939-4	Water	11/18/2015		Х				
	BPOW5-7	JC9090-1	Water	11/20/2015		Х	Х			
JC9090	FB112015PP1	JC9090-2	Water	11/20/2015		Х	Х			
	TB112015PP2	JC9090-3	Water	11/20/2015		Х				
100001	RE119D1	JC9091-1	Water	11/20/2015		Х	Х			
JC9091	TB112015PP1	JC9091-2	Water	11/20/2015		Х				

Notes:

- 1. Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.
- 2. SDG JC8939: Matrix spike/matrix spike duplicate analysis was performed on sample location RE 117D2 for VOC and SVOC.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		Reported		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
3. Collection Technique (grab, composite, etc.)		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 8260C, 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2			Cool to < 6°C;
SW-846 8260C	Water	14 days from collection to analysis	preserved to a pH of less than 2 s.u

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination in SDGs JC8939 and JC9091.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Locations Sample Result		Qualification
SDG JC9090:			
BPOW5-7	Acetone	Detected sample results >RL and <bal< td=""><td>"UB" at the RL</td></bal<>	"UB" at the RL
BPOV5-7	TIC: Unknown (RT7.60)	Detected sample results less than 5 times blank result	R

RL Reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9090 or JC9091.

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SDG JC8939:	
RE 117D2	All compounds , except Freon 113

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification	
. 111	Non-detect	UJ	
> UL	Detect	J	

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits in SDGs JC8939, JC9090 and JC9091.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with these SDGs.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC8939, JC9090 or JC9091.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were identified in SDG JC9090 in sample locations: BPOW5-7 and FB112015PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2 and 8260C	Repo	orted	Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/I	MS)			
Tier II Validation					
Holding times & Temperature		X		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)		Х		Х	
Matrix Spike Duplicate(MSD)		Х		Х	
MS/MSD Precision (RPD)		Х	Х		
Field/Lab Duplicate (RPD)					Х
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries in SDG JC8939.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9090 and JC9091.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits for SDGs JC8939, JC9090 and JC9091.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with these SDGs.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	orted		mance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times		Х		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate(MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Field/Lab Duplicate (RPD)					Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: XISA HOLL

DATE: December 22, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

6WFB WFB

CHAIN OF CUSTODY Accutest New Jersey/SPL Environmental

PAGE ___ OF

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Melville NY 11747	Bethpage	•	NY	Journe	only realise	,						7			1	1	1	1		- 1	1	- 1	SO - Soil
E-mail	Project #			Street	adis, U	.S., Inc	. Att	<u>n: Ac</u>	cts	Paya	ble	유	İ	1		1	1	1			1	1	SL- Sludge
Soma Das, soma.das@arcadis-us.com	Mari	496.1614.	MCT-	cao	~00/855	<u>.</u>						٦ž	1	1	1	ļ	1		1	1	1	- 1	SED-Sediment OI - Oil
Fax#	Client Purchas	se Order#	V-HU I	City	Plaza	Drive, S	Suite (600				1 5	×	1	1	l		l	1	1		1	LIQ - Other Liquid
631-249-7610 Sampler(s)-Name(s)	Work Author	rization #: NY00	1406 2046	11:-4			Si	ate		Ζp		VC82602NG36GW+40	B8270SIM14DIOX	i		1	2.50				1	1	AIR - Air SOL - Other Solid
Sampler(s) Peragla Statement	Project Manag	er	1450_2015	Attentio	lands	Ranch,	, cc			80	129	18	4	1	ı	1	ĺ	1	1	1	1	1	WP - Wipe
Yst Vrerosta Sig-Gus	Carlo San	Giovanni		ATTOC LEGG	и:	\sim		_				ž	=		1		1	l	1	1	1	1	FB-Field Blank EB-Equipment Blank
,			Collection			-20r	45	U.	s.r			8	1 5	l	i i			i	1	1	1	1	RB- Rinse Blank
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JC8939: Chain of Custody Page 1 of 4



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JC8939: Chain of Custody

Page 3 of 4

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Report of Analysis

Client Sample ID: RE 117D1

 Lab Sample ID:
 JC8939-1
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 2D150433.D 1 11/24/15 BK n/a n/a V2D6321

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.75	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: RE 117D1

Lab Sample ID: JC8939-1 **Date Sampled:** 11/18/15 **Date Received:** 11/19/15 Matrix: AQ - Ground Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	9.4	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
					-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1050 50 5	D.1. G	1000		= - 1	2001		
1868-53-7	Dibromofluoromethane	102%		76-1	20%		
17060-07-0	1,2-Dichloroethane-D4	100%		73-1	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	102%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: RE 117D2

 Lab Sample ID:
 JC8939-2
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 2D150333.D 1 11/21/15 BK n/a n/a V2D6317

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units Q
67-64-1	Acetone	ND	10	3.3	ug/l J
71-43-2	Benzene	ND	0.50	0.24	ug/l
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l
75-25-2	Bromoform	ND	1.0	0.23	ug/l
74-83-9	Bromomethane	ND	2.0	0.42	ug/l
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l
75-00-3	Chloroethane	ND	1.0	0.34	ug/l
67-66-3	Chloroform	ND	1.0	0.19	ug/l
74-87-3	Chloromethane	ND	1.0	0.41	ug/l
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug∕l V
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l J
76-13-1	Freon 113	ND	5.0	0.52	ug/l
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l
100-42-5	Styrene	ND	1.0	0.27	ug/l
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug∕l ∀
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l J
108-88-3	Toluene	0.98	1.0	0.16	ug/l J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l J
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l J

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



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Report of Analysis

Client Sample ID: RE 117D2

Lab Sample ID: JC8939-2 **Date Sampled:** 11/18/15 Matrix: **Date Received:** 11/19/15 AQ - Ground Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l	J	
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l	J	
	m,p-Xylene	ND	1.0	0.38	ug/l	.I	
95-47-6	o-Xylene	ND	1.0	0.17	ug/l	J	
						Ŭ	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	1000/		76-1	200/		
		100%					
17060-07-0	1,2-Dichloroethane-D4	98%		73-1			
2037-26-5	Toluene-D8	100%		84-1			
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



4

Report of Analysis

Client Sample ID: FB111815PP1

Lab Sample ID:JC8939-3Date Sampled:11/18/15Matrix:AQ - Field Blank WaterDate Received:11/19/15Method:SW846 8260CPercent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 2D150331.D 1 11/21/15 BK n/aV2D6317 n/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

 $N = \ \ Indicates \ presumptive \ evidence \ of \ a \ compound$



Client Sample ID: FB111815PP1

Lab Sample ID: JC8939-3 **Date Sampled:** 11/18/15 Matrix: **Date Received:** 11/19/15 AQ - Field Blank Water Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	99%		76-1	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-1	22%		
2037-26-5	Toluene-D8	99%		84-1	19%		
460-00-4	4-Bromofluorobenzene	101%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB111815PP1

 Lab Sample ID:
 JC8939-4
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Trip Blank Water
 Date Received:
 11/19/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D150332.D	1	11/21/15	BK	n/a	n/a	V2D6317
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Client Sample ID: TB111815PP1

Lab Sample ID: JC8939-4 **Date Sampled:** 11/18/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/19/15 Method: SW846 8260C Percent Solids: n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q					
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l						
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l						
	m,p-Xylene	ND	1.0	0.38	ug/l						
95-47-6	o-Xylene	ND	1.0	0.17	ug/l						
					•						
CAS No.	Surrogate Recoveries	Run# 2	Limi	ts							
1868-53-7	Dibromofluoromethane	100%	76-120%								
17060-07-0	1,2-Dichloroethane-D4	97%	73-122%								
2037-26-5	Toluene-D8	99%	84-119%								
460-00-4	4-Bromofluorobenzene	101%		78-1	17%						
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q					
	Total TIC, Volatile		0		ug/l						

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: RE 117D1 Lab Sample ID: JC8939-1

Matrix: Method:

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 11/18/15 AQ - Ground Water Date Received: 11/19/15 SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99203.D 1 11/27/15 **AMA** 11/22/15 M:OP45518 M:MSI3704 Run #2

RL

MDL

Units

Q

Final Volume Initial Volume Run #1 950 ml 1.0 ml

CAS No. Compound 123-91-1

Run #2

1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 77% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 64% 1718-51-0 Terphenyl-d14 82% 29-129%

Result

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: RE 117D2 Lab Sample ID: JC8939-2

 Lab Sample ID:
 JC8939-2
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/19/15

 Method:
 SW846 8270D BY SIM SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a 199186.D 1 11/26/15 AMA 11/22/15 M:OP45518 M:MSI3703

Run #2

Run #1 1000 ml 1.0 ml

Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.20 0.076 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 75% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 66% 1718-51-0 Terphenyl-d14 89% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: FB111815PP1

 Lab Sample ID:
 JC8939-3
 Date Sampled:
 11/18/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/19/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199204.D
 1
 11/27/15
 AMA
 11/22/15
 M:OP45518
 M:MSI3704

Run #2

Initial Volume Final Volume Run #1 960 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.079 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 79% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 68% 1718-51-0 Terphenyl-d14 81% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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Data Deliver

Commercial "A" (Level 1)

Commercial "B" (Level 2)

FULLT1 (Level 3+4)

NJ Reduced

Commercial "C"

ed By (Accutest PM): / Date:

Turnaround Time (Business days)

Std. 15 Business Days

X Std. 10 Business Days (by Contract only)

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19 Day RUSH

5 Day RUSH

3 Day EMERGENCY

2 Day EMERGENCY

1 Day EMERGENCY

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JC9090: Chain of Custody

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11-20-15

Date Time:

Page 1 of 5

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JC9090: Chain of Custody

Page 3 of 5



Client Sample ID: BPOW5-7

Lab Sample ID: JC9090-1 **Date Sampled:** 11/20/15 Matrix: AQ - Ground Water Date Received: 11/20/15 Method: Percent Solids: n/a EPA 524.2 REV 4.1

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100758.D 1 11/24/15 MD n/aV1B4770 n/a

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone 5.0	1.1—	5.0	0.91	ug/l	X	UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l		OB
71-43-2	Benzene	ND	0.50	0.057	ug/l		
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l		
75-25-2	Bromoform	ND	0.50	0.046	ug/l		
74-83-9	Bromomethane	ND	0.50	0.077	ug/l		
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l		
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l		
75-00-3	Chloroethane	ND	0.50	0.037	ug/l		
67-66-3	Chloroform	ND	0.50	0.031	ug/l		
74-87-3	Chloromethane	ND	0.50	0.044	ug/l		
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l		
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l		
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l		
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l		
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l		
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l		
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l		
76-13-1	Freon 113	ND	1.0	0.10	ug/l		
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l		
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l		
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l		
100-42-5	Styrene	ND	0.50	0.028	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l		
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l		
108-88-3	Toluene	0.49	0.50	0.044	ug/l	J	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



4

Report of Analysis

Client Sample ID: BPOW5-7 Lab Sample ID: JC9090-1

 Lab Sample ID:
 JC9090-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q		
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l			
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l			
	m,p-Xylene	ND	0.50	0.13	ug/l			
95-47-6	o-Xylene	ND	0.50	0.029	ug/l			
CAS No.	Surrogate Recoveries	ate Recoveries Run# 1		Limi	ts			
2199-69-1	1.2-Dichlorobenzene-d4	99%		78-11	14%			
460-00-4	4-Bromofluorobenzene	102%		77-11	15%			
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q		
	unknown		7.60	.65		ug/l	_	R
	Total TIC, Volatile			65		ug/l		

 $ND = Not detected \qquad MDL = 1$

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: FB112015PP1

Lab Sample ID:JC9090-2Date Sampled:11/20/15Matrix:AQ - Field Blank WaterDate Received:11/20/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100759.D 1 11/24/15 MD V1B4770 n/an/aRun #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.6	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	0.20	0.50	0.047	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

 $ND = Not detected \qquad MDL = Not MDL$

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: FB112015PP1

Lab Sample ID: JC9090-2 **Date Sampled:** 11/20/15 Matrix: **Date Received:** 11/20/15 AQ - Field Blank Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q		
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l			
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l			
	m,p-Xylene	ND	0.50	0.13	ug/l			
95-47-6	o-Xylene	ND	0.50	0.029	ug/l			
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts			
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-11	4%			
460-00-4	4-Bromofluorobenzene	102%		77-11	5%			
a.a		_			~	A.	_	
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q	
	unknown		7.60	.59		ug/l	J	N
	Total TIC, Volatile			.59		ug/l	J	N
						-		IN

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB112015PP2

Lab Sample ID:JC9090-3Date Sampled:11/20/15Matrix:AQ - Trip Blank WaterDate Received:11/20/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100760.D	1	11/24/15	MD	n/a	n/a	V1B4770
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: TB112015PP2

Lab Sample ID: JC9090-3 **Date Sampled:** 11/20/15 Matrix: **Date Received:** 11/20/15 AQ - Trip Blank Water Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	100%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: BPOW5-7 Lab Sample ID: JC9090-1

 Lab Sample ID:
 JC9090-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

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 SW946 9270D BY SIM SW946 2510C
 Proceed Saliday
 1/2

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a 199205.D 1 11/27/15 AMA 11/22/15 M:OP45518 M:MSI3704

Run #2

Run #1 950 ml Final Volume
1.0 ml

Run #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 79% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 69% 1718-51-0 Terphenyl-d14 84% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: FB112015PP1

Lab Sample ID: JC9090-2 **Date Sampled:** 11/20/15 Matrix: AQ - Field Blank Water Date Received: 11/20/15 Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99206.D 1 11/27/15 **AMA** 11/22/15 M:OP45518 M:MSI3704

Run #2

Initial Volume Final Volume Run #1 920 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 82% 26-121% 321-60-8 2-Fluorobiphenyl 74% 28-107% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC9091: Chain of Custody

Page 3 of 4

Client Sample ID: RE119D1

Lab Sample ID: JC9091-1 **Date Sampled:** 11/20/15 Matrix: AQ - Ground Water **Date Received:** 11/20/15 Method: Percent Solids: n/a SW846 8260C

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B137063.D	1	12/01/15	EH	n/a	n/a	V2B6106
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.72	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



4

Report of Analysis

Client Sample ID: RE119D1

 Lab Sample ID:
 JC9091-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1868-53-7	Dibromofluoromethane	105%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	115%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an

RL = Reporting Limit

E = Indicates value exceeds calibration range

 $J = \ Indicates \ an \ estimated \ value$



Client Sample ID: TB112015PP1

 Lab Sample ID:
 JC9091-2
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B137000.D	1	11/28/15	EH	n/a	n/a	V2B6102
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: TB112015PP1

Lab Sample ID: JC9091-2 **Date Sampled:** 11/20/15 Matrix: **Date Received:** 11/20/15 AQ - Ground Water Method: SW846 8260C **Percent Solids:** n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
1868-53-7	Dibromofluoromethane	102%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	103%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	102%		78-11	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

Client Sample ID: RE119D1

 Lab Sample ID:
 JC9091-1
 Date Sampled:
 11/20/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/20/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199207.D
 1
 11/27/15
 AMA
 11/22/15
 M:OP45518
 M:MSI3704

Run #2

Initial Volume Final Volume Run #1 900 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 74% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 67% 1718-51-0 Terphenyl-d14 83% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

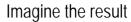
MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value







Northrop Grumman Corporation-Operable Unit 2

Data Review

BETHPAGE, NEW YORK

Volatile and Semivolatile Analyses

SDGs #JC9220, JC9566 and JC9689

Analyses Performed By: Accutest Laboratories Dayton, New Jersey

Report #24832R December 28, 2015 Review Level: Tier II Project #NY001496.1514.NAVI4

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # JC9220, JC9566 and JC9689 for samples collected in association with the Northrop Grumman-Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis				
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	РСВ	MET	MISC
	FB112315PP1	JC9220-1	Water	11/23/2015		Х	Х			
JC9220	TB112315PP1	JC9220-2	Water	11/23/2015		Χ				
	RE118D1	JC9220-3	Water	11/23/2015		Х	Х			
	FB113015PP1	JC9566-1	Water	11/30/2015		Х	Х			
ICOECC	BPOW 6-1	JC9566-2	Water	11/30/2015		Χ	Х			
JC9566	BPOW 6-2	JC9566-3	Water	11/30/2015		Х	Х			
	TB113015PP1	JC9566-4	Water	11/30/2015		Χ				
	FB120115PP1	JC9689-1	Water	12/01/2015		Χ	Х			
	BPOW 6-3	JC9689-2	Water	12/01/2015		Χ	Х			
JC9689	BPOW 6-4	JC9689-3	Water	12/01/2015		Χ	Χ			
	REP120115PP1	JC9689-4	Water	12/01/2015	BPOW 6-4	Х	Х			
	TB120115PP1	JC9689-5	Water	12/01/2015		Х				

Note:

 Semivolatile (1,4-Dioxane) analysis was performed at Accutest Laboratories, Marlborough, MA (Accutest-NE) facility.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed		Reported		mance ptable	Not	
		Yes	No	Yes	Required	
Sample receipt condition		Х		Х		
2. Requested analyses and sample results		Х		Х		
3. Collection Technique (grab, composite, etc.)		Х		Х		
4. Methods of analysis		Х		Х		
5. Reporting limits		Х		Х		
6. Sample collection date		Х		Х		
7. Laboratory sample received date		X		Х		
8. Sample preservation verification (as applicable)		Х		Х		
9. Sample preparation/extraction/analysis dates		Х		Х		
10. Fully executed Chain-of-Custody (COC) form completed		Х		Х		
11. Narrative summary of QA or sample problems provided		Х		Х		
12. Data Package Completeness and Compliance	•	Х		Х		

QA - Quality Assurance

VOLATILE ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA), Methods 8260C, 524.2 and 8270D-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method Matri		Holding Time	Preservation	
EPA 524.2			Cool to < 6°C;	
SW-846 Water 8260C		14 days from collection to analysis	preserved to a pH of less than 2 s.u	

s.u. Standard units

All samples were analyzed within the specified holding time and temperature criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination in SDG JC9220.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required in SDG JC9566.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Analytes		Sample Result	Qualification
SDG JC9689:			
BPOW 6-3	Acetone	Detected sample results >RL and <bal< td=""><td>"UB" at the RL</td></bal<>	"UB" at the RL

RL Reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC

analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected on a sample location associated with SDGs JC9220 or JC9566.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC9689:				
BPOW 6-4/ REP120115PP1	All compounds	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample

concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate sample was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in SDG JC9220. TICs were identified in SDG JC9566 in sample locations FB113015PP1; and, in SDG JC9689 in sample location FB12015PP1. The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. TICs are qualified as estimated (JN).

Overall system performance was noted by the laboratory in the case narrative as acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 524.2 and 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)			
Tier II Validation					
Holding times & Temperature		X		X	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks		Х	Х		
C. Trip blanks		Х	Х		
Surrogate (%R)		Х		Х	
Laboratory Control Sample (%R)		Х		Х	
Laboratory Control Sample Duplicate(LCSD)					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS)					Х
Matrix Spike Duplicate(MSD)					Х
MS/MSD Precision (RPD)					Х
Field/Lab Duplicate (RPD)		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х

[%]R Percent Recovery RPD Relative Percent Difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location associated with SDGs JC9220, JC9566 or JC9689.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPD within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with SDG JC9220 and JC9566

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC9689:				
BPOW 6-4/ REP120115PP1	1,4-Dioxane	0.22 U	0.21 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D-SIM	Rep	Reported		mance ptable	Not Required	
	No	Yes	No	Yes	Required	
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)				
Tier II Validation						
Holding times		Х		X		
Reporting limits (units)		Х		Х		
Blanks						
A. Method blanks		X		X		
B. Equipment blanks		X		X		
Laboratory Control Sample (LCS) %R		X		X		
Laboratory Control Sample Duplicate(LCSD) %R		X		X		
LCS/LCSD Precision (RPD)		X		X		
Matrix Spike (MS) %R					X	
Matrix Spike Duplicate(MSD) %R					Х	
MS/MSD Precision (RPD)					Х	
Field/Lab Duplicate (RPD)		Х		Х		
Surrogate Spike Recoveries		Х		Х		
Dilution Factor		Х		Х		
Moisture Content					Х	

%R Percent recovery RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: Xisa Horlan

DATE: December 28, 2015

PEER REVIEW BY: Todd Church

DATE: December 29, 2015

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

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CHAIN OF CUSTODY

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JC9220: Chain of Custody Page 1 of 4



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JC9220: Chain of Custody Page 2 of 4



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Report of Analysis

Client Sample ID: FB112315PP1

Lab Sample ID:JC9220-1Date Sampled:11/23/15Matrix:AQ - Field Blank WaterDate Received:11/24/15Method:SW846 8260CPercent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A156464.D	1	11/30/15	VC	n/a	n/a	V1A6717
Run #2							

Purge Volume Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected M

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: FB112315PP1

Lab Sample ID: JC9220-1 **Date Sampled:** 11/23/15 **Date Received:** 11/24/15 Matrix: AQ - Field Blank Water Method: SW846 8260C Percent Solids: n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m, p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
1868-53-7	Dibromofluoromethane	100%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-12	22%		
2037-26-5	Toluene-D8	99%		84-1	19%		
460-00-4	4-Bromofluorobenzene	100%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



4

Report of Analysis

Client Sample ID: TB112315PP1

 Lab Sample ID:
 JC9220-2
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Trip Blank Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1A156465.D 1 11/30/15 VC n/aV1A6717 n/aRun #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: TB112315PP1

Lab Sample ID: JC9220-2 **Date Sampled:** 11/23/15 Matrix: AQ - Trip Blank Water **Date Received:** 11/24/15 Method: Percent Solids: n/a SW846 8260C

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
1969 52 7	D'il and a file and a state and	1000/		76.1	200/		
1868-53-7	Dibromofluoromethane	100%		76-1			
17060-07-0	1,2-Dichloroethane-D4	97%		73-1			
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	99%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: RE 118D1

 Lab Sample ID:
 JC9220-3
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A156488.D	1	12/01/15	VC	n/a	n/a	V1A6718

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.25	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
76-13-1	Freon 113	ND	5.0	0.52	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.7	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	0.57	1.0	0.16	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	

ND = Not detected MDL = M

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

4

Report of Analysis

Client Sample ID: RE 118D1

 Lab Sample ID:
 JC9220-3
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Ground Water
 Date Received:
 11/24/15

 Method:
 SW846 8260C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l		
	m,p-Xylene	ND	1.0	0.38	ug/l		
95-47-6	o-Xylene	ND	1.0	0.17	ug/l		
					-		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
1868-53-7	Dibromofluoromethane	98%		76-12	20%		
17060-07-0	1,2-Dichloroethane-D4	97%		73-12	22%		
2037-26-5	Toluene-D8	100%		84-1	19%		
460-00-4	4-Bromofluorobenzene	101%		78-1	17%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit B = Indicates analyte found in associated method blank <math>E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

14 of 46
ACCUTEST
JC9220
LABORATORIES

Page 1 of 1

Report of Analysis

Client Sample ID: FB112315PP1

 Lab Sample ID:
 JC9220-1
 Date Sampled:
 11/23/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 11/24/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199247.D
 1
 12/01/15
 AMA
 11/24/15
 M:OP45543
 M:MSI3707

Run #2

Run #1 960 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.21 0.079 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 88% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 75% 1718-51-0 Terphenyl-d14 29-129% 86%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

Report of Analysis

By

AMA

11/24/15

Client Sample ID: RE 118D1

Lab Sample ID: JC9220-3

Matrix: AQ - Ground Water

Method: SW846 8270D BY SIM SW846 3510C

DF

1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Date Sampled: 11/23/15
Date Received: 11/24/15
Percent Solids: n/a

M:OP45543

Prep Date Prep Batch Analytical Batch

M:MSI3707

Run #1 ^a Run #2

Initial Volume Final Volume Run #1 920 ml 1.0 ml

File ID

I99248.D

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.083 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 67% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 60% 1718-51-0 Terphenyl-d14 87% 29-129%

Analyzed

12/01/15

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



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JC9566: Chain of Custody Page 3 of 3

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Report of Analysis

Client Sample ID: FB113015PP1

Lab Sample ID:JC9566-1Date Sampled:11/30/15Matrix:AQ - Field Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100892.D	1	12/03/15	MD	n/a	n/a	V1B4776
Dun #2							

Run #1 5.0 ml Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.2	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

Client Sample ID: FB113015PP1

Lab Sample ID:JC9566-1Date Sampled:11/30/15Matrix:AQ - Field Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-1	14%		
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAS No.	Tentatively Identified Compo	ntatively Identified Compounds			Conc.	Units	Q
	unknown		7.61	.65		ug/l	JΝ
	Total TIC, Volatile			.65		ug/l	JN

ND = Not detected MDL = Method Detection Limit J

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



4

Report of Analysis

Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

 Lab Sample ID:
 JC9566-2
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 1B100893.D 1 12/03/15 MD n/a n/a V1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

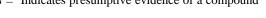
CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value





Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

Date Sampled: 11/30/15 **Date Received:** 12/01/15 Matrix: AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride m,p-Xylene	ND ND	0.50 0.50	0.032 0.13	ug/l ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1	1,2-Dichlorobenzene-d4	101%		78-1	14%		
460-00-4	4-Bromofluorobenzene	102%		77-1	15%		
CAS No.	Tentatively Identified Compo	R.T.	Est.	Conc.	Units	Q	
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

 Lab Sample ID:
 JC9566-3
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100894.D112/03/15MDn/an/aV1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Date Sampled: 11/30/15 **Date Received:** 12/01/15

n/a

Percent Solids:

4

Report of Analysis

Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
		100-1		=0.4			
2199-69-1	1,2-Dichlorobenzene-d4	103%		78-1	, .		
460-00-4	4-Bromofluorobenzene	104%		77-1	15%		
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
				0			
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates and J = Indicates

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: TB113015PP1

Lab Sample ID:JC9566-4Date Sampled:11/30/15Matrix:AQ - Trip Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100895.D 1 12/03/15 MD V1B4776 n/an/aRun #2

Purge Volume Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.5	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Report of Analysis

Client Sample ID: TB113015PP1

Lab Sample ID:JC9566-4Date Sampled:11/30/15Matrix:AQ - Trip Blank WaterDate Received:12/01/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	14%		
460-00-4	4-Bromofluorobenzene	104%		77-11	15%		
CAS No.	Tentatively Identified Compo	entatively Identified Compounds			Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit B = Indicates analyte found in associated method blank <math>E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FB113015PP1

 Lab Sample ID:
 JC9566-1
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/01/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #1 a199338.D112/10/15AMA12/02/15M:OP45603M:MSI3713

Run #2

Run #1 900 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 67% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 61% 1718-51-0 Terphenyl-d14 75% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



- 4

Page 1 of 1

Report of Analysis

Client Sample ID: BPOW 6-1 Lab Sample ID: JC9566-2

 Lab Sample ID:
 JC9566-2
 Date Sampled:
 11/30/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/01/15

 Method:
 SW846 8270D BY SIM SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 199339.D
 1
 12/10/15
 AMA
 12/02/15
 M:OP45603
 M:MSI3713

Run #2

Run #1 900 ml Final Volume
1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 72% 26-121% 321-60-8 2-Fluorobiphenyl 64% 28-107% 1718-51-0 Terphenyl-d14 75% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

Client Sample ID: BPOW 6-2 Lab Sample ID: JC9566-3

Date Sampled: 11/30/15 Matrix: AQ - Ground Water Date Received: 12/01/15

Method: SW846 8270D BY SIM SW846 3510C Percent Solids: n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99340.D 1 12/10/15 **AMA** 12/02/15 M:OP45603 M:MSI3713

Run #2

Final Volume Initial Volume Run #1 890 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.085 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits

4165-60-0 Nitrobenzene-d5 80% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 71% 1718-51-0 Terphenyl-d14 76% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



ACCUTEST.	GW	:	CHA						Y											PA	GE		_\oi	F
*	EB a		2235 R	Route 13	0, Dayto	n, NJ 08	810					-	FED-EX	Trackin	g#	#5			Bottle C	Order Con	trol#			
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Client / Reporting Information			Project	www.	accutest.	com								Rec	ulosto	d Ana	lveie (SAO T	FST C	ODE	sheet)	<u> </u>		Matrix Codes
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Soma Das, soma.das@arcadis-us.com Phone # Fax #	Client Purch	nase Order#		City	iaza L	iive, S	une	State			Zip		2	일	24,5		l							SOL - Other Solid WP - Wipe
631-249-7600 631-24	9-7610 Work Aut	norization #: NY001	196_2015	High	lands l	Ranch,	C	0		;	8012	29	8	4						l				FB-Field Blank
	Phone # Project Mar			Attentio	n:	<u> </u>							VC82002NG386W	B8270SIM14DIOX	2					l				EB-Equipment Blank RB- Rinse Blank
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JC9689: Chain of Custody

Page 1 of 4



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	10 Day RUSH							NJ Reduc		•			,	Form			_ L										İ
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JC9689: Chain of Custody

Page 2 of 4

Client Sample ID: FB120115PP1

Lab Sample ID:JC9689-1Date Sampled:12/01/15Matrix:AQ - Field Blank WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100883.D	1	12/03/15	MD	n/a	n/a	V1B4776
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.7	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

 $N = \ Indicates \ presumptive \ evidence \ of \ a \ compound$



Client Sample ID: FB120115PP1

Lab Sample ID: JC9689-1 **Date Sampled:** 12/01/15 Matrix: **Date Received:** 12/02/15 AQ - Field Blank Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2100 00 1	100:11	10.107		5 0.4	1.40/		
2199-69-1	1,2-Dichlorobenzene-d4	104%		78-1			
460-00-4	4-Bromofluorobenzene	105%		77-1	15%		
		_		_	_		_
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
			0.25	2		/1	
	alkene		8.25	2		ug/l	JN
	Total TIC, Volatile			2		ug/l	JN

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: BPOW 6-3 Lab Sample ID: JC9689-2

 Lab Sample ID:
 JC9689-2
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File IDDFAnalyzedByPrep DatePrep BatchAnalytical BatchRun #11B100886.D112/03/15MDn/an/aV1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone 5.0	0.92	5.0	0.91	ug/l	У	UB
78-93-3	2-Butanone	ND	5.0	0.57	ug/l		-
71-43-2	Benzene	ND	0.50	0.057	ug/l		
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l		
75-25-2	Bromoform	ND	0.50	0.046	ug/l		
74-83-9	Bromomethane	ND	0.50	0.077	ug/l		
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l		
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l		
75-00-3	Chloroethane	ND	0.50	0.037	ug/l		
67-66-3	Chloroform	ND	0.50	0.031	ug/l		
74-87-3	Chloromethane	ND	0.50	0.044	ug/l		
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l		
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l		
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l		
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l		
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l		
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l		
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l		
76-13-1	Freon 113	ND	1.0	0.10	ug/l		
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l		
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l		
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l		
100-42-5	Styrene	ND	0.50	0.028	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l		
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l		
108-88-3	Toluene	ND	0.50	0.044	ug/l		

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

 $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: BPOW 6-3 Lab Sample ID: JC9689-2

Date Sampled: 12/01/15 **Date Received:** 12/02/15 Matrix: AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
		4000		=0.4			
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	/ -		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
		_		_			_
CAS No.	Tentatively Identified Compo	ounds	R.T.	Est.	Conc.	Units	Q
	m . 1 m/G . 1/1 . 11			0		(1	
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: BPOW 6-4 Lab Sample ID: JC9689-3

 Lab Sample ID:
 JC9689-3
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 EPA 524.2 REV 4.1
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 1B100887.D 1 12/03/15 MD n/a n/a V1B4776

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 2 of 2

Date Sampled: 12/01/15 **Date Received:** 12/02/15

n/a

Percent Solids:

4

Report of Analysis

Client Sample ID: BPOW 6-4 Lab Sample ID: JC9689-3

Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its		
2199-69-1	1,2-Dichlorobenzene-d4	102%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compounds		R.T.	Est.	Conc.	Units	Q
				_			
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Incomparison Detection Limit <math>J = Incomparison Detection Limit Detection Detect

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Client Sample ID: REP120115PP1

Lab Sample ID:JC9689-4Date Sampled:12/01/15Matrix:AQ - Ground WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100885.D	1	12/03/15	MD	n/a	n/a	V1B4776
Run #2							

	Purge Volume	
Run #1	5.0 ml	
Run #2		

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID: REP120115PP1

Lab Sample ID: JC9689-4 **Date Sampled:** 12/01/15 Matrix: **Date Received:** 12/02/15 AQ - Ground Water Method: **Percent Solids:** EPA 524.2 REV 4.1 n/a

Northrop Grumman, OU2 Hydro, Bethpage, NY **Project:**

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2 Limit		ts		
2199-69-1	1,2-Dichlorobenzene-d4	103%		78-1	14%		
460-00-4	4-Bromofluorobenzene	103%		77-1	15%		
CAS No.	Tentatively Identified Compounds		R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Client Sample ID: TB120115PP1

Lab Sample ID:JC9689-5Date Sampled:12/01/15Matrix:AQ - Trip Blank WaterDate Received:12/02/15Method:EPA 524.2 REV 4.1Percent Solids:n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 1B100884.D 1 12/03/15 MD V1B4776 n/an/aRun #2

Purge Volume

Run #1 5.0 ml

Run #2

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1.3	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
76-13-1	Freon 113	ND	1.0	0.10	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	

ND = Not detected MDL =

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

Report of Analysis

Client Sample ID: TB120115PP1

Lab Sample ID: JC9689-5 **Date Sampled:** 12/01/15 Matrix: AQ - Trip Blank Water **Date Received:** 12/02/15 Method: EPA 524.2 REV 4.1 **Percent Solids:** n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

Special VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l		
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l		
	m,p-Xylene	ND	0.50	0.13	ug/l		
95-47-6	o-Xylene	ND	0.50	0.029	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts		
2199-69-1	1,2-Dichlorobenzene-d4	99%		79 11	1.40%		
460-00-4	4-Bromofluorobenzene	102%	78-114% 77-115%				
400-00-4	4-Bi omoriuoi obenzene	10270		//-1]	1370		
CAS No.	Tentatively Identified Compounds		R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

RL = Reporting Limit

E = Indicates value exceeds calibration range



Report of Analysis

Client Sample ID: FB120115PP1

 Lab Sample ID:
 JC9689-1
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Field Blank Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch Run #1 a 199290.D 1 12/04/15 AMA 12/03/15 M:OP45613 M:MSI3710

Run #2

Run #1 900 ml 1.0 ml

Run #2

CAS No. Compound RLUnits Result **MDL** Q 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 74% 26-121% 321-60-8 2-Fluorobiphenyl 74% 28-107% 1718-51-0 Terphenyl-d14 86% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

 Client Sample ID:
 BPOW 6-3

 Lab Sample ID:
 JC9689-2
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF **Prep Date Analytical Batch** Analyzed By **Prep Batch** Run #1 a I99291.D 1 12/04/15 **AMA** 12/03/15 M:OP45613 M:MSI3710 Run #2

Run #1 880 ml 1.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.23	0.086	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
4165-60-0 321-60-8	Nitrobenzene-d5 2-Fluorobiphenyl	83% 78%			21% 07%	
1718-51-0	Terphenyl-d14	89%		29-1	29%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Report of Analysis

 Client Sample ID:
 BPOW 6-4

 Lab Sample ID:
 JC9689-3
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

DF **Prep Date Analytical Batch** File ID Analyzed By **Prep Batch** Run #1 a I99292.D 1 12/04/15 **AMA** 12/03/15 M:OP45613 M:MSI3710 Run #2

Run #1 910 ml 1.0 ml
Run #2

CAS No. Compound RLUnits Result **MDL** 123-91-1 1,4-Dioxane ND 0.22 0.084 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 80% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 76% 1718-51-0 Terphenyl-d14 89% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound

Q



Report of Analysis

 Client Sample ID:
 REP120115PP1

 Lab Sample ID:
 JC9689-4
 Date Sampled:
 12/01/15

 Matrix:
 AQ - Ground Water
 Date Received:
 12/02/15

 Method:
 SW846 8270D BY SIM
 SW846 3510C
 Percent Solids:
 n/a

Project: Northrop Grumman, OU2 Hydro, Bethpage, NY

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 a 199293.D 1 12/04/15 AMA 12/03/15 M:OP45613 M:MSI3710

Run #2

Run #1 950 ml 1.0 ml Run #2

XuII #2

CAS No. Compound RLMDL Units Result Q 123-91-1 1,4-Dioxane ND 0.21 0.080 ug/1 CAS No. **Surrogate Recoveries** Run#1 Run# 2 Limits 4165-60-0 Nitrobenzene-d5 82% 26-121% 321-60-8 2-Fluorobiphenyl 28-107% 76% 1718-51-0 Terphenyl-d14 87% 29-129%

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Appendix D

ARCADIS Separate and Ongoing OU2 Monitoring of Navy Wells

Well	Well Owner	1st Q	2nd Q	3rd Q	4th Q	VOC Analysis Method
Outpost wells						
BPOW1-1	Navy		Х		Х	524.2
BPOW1-2	Navy		Х		Х	524.2
BPOW1-3	Navy		Х		Х	524.2
BPOW1-4	Navy		Х		Х	524.2
BPOW1-5	Navy		Х		Х	524.2
BPOW1-6	Navy		Х		Χ	524.2
BPOW2-1	Navy		Х		Х	524.2
BPOW2-2	Navy		Х		Χ	524.2
BPOW2-3	Navy		Х		Х	524.2
BPOW3-1	Navy		Х		Х	524.2
BPOW3-2	Navy		Х		Χ	524.2
BPOW3-3	Navy		Х		Х	524.2
BPOW3-4	Navy		Х		Х	524.2
Semi-annual and annua	ı					
TT102D	Navy		Х		Х	8260C
TT102D2	Navy		Х		Х	8260C
FW-03	Navy		Х			8260C
GM-15D	Navy		Х		Х	8260C
GM-15D2	Navy		Х		Х	8260C
GM-17D	Navy		Х		Х	8260C
GM-17I	Navy		Х		Х	8260C
GM-18D	Navy		Х		Х	8260C
GM-21D	Navy		Х			8260C
GM-39DA	Navy		Х		Х	8260C
GM-39DB	Navy		Х		Χ	8260C
GM-73D	Navy		Х		Χ	8260C
GM-73D2	Navy		X		Х	8260C
GM-74D	Navy		X		Х	8260C
GM-74I	Navy		Х		Χ	8260C
GM-75D2	Navy		X		Х	8260C
GM-78I	Navy		X			8260C
GM-78S	Navy		Χ			8260C
GM-79D	Navy		Χ		Χ	8260C
GM-79I	Navy		Χ		Χ	8260C
HN-24I	Navy		Х			8260C
HN-40I	Navy		Х			8260C
HN-40S	Navy		Х			8260C
HN-42I	Navy		Х			8260C
HN-42S	Navy		X			8260C

Q: Quarter

VOC: volatile organic compound